

Bulletin 1404 Powermonitor 3000



Allen-Bradley

Catalog Numbers 1404-M4, 1404-M5, 1404-M6, 1404-M8

User Manual



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Automation**

Powermonitor 3000 Data Tables

This section provides the detailed data table definitions you may use for setting up communication with a Powermonitor 3000 unit. One set of data tables covers all the Powermonitor 3000 models (M4, M5, M6, and M8) and communication options (-000, -232, -RIO, -DNT, -ENT, and -CNT). The individual tables include notes regarding their applicability to various models and communication options. Please note carefully these designations.

The table on [page 188](#) summarizes the purpose and general attributes of each data table and lists each data table's access method (read-only or read/write), addressing options, number of elements and Powermonitor 3000 model applicability.

The tables on [pages 191...268](#) provide comprehensive details of the individual data tables along with application notes.

For your convenience, summary information from the Summary of Powermonitor 3000 Data Tables for all Communication Options on [page 188](#) is repeated at the top of each individual table.

Summary of Powermonitor 3000 Data Tables for all Communication Options

Data Table Name and Description ⁽¹⁾	Data Access	Indexed Reads ⁽³⁾	File No. ⁽⁴⁾ (DF1, CSP)	Remote I/O BT Size	Assy Instance (CIP, DNet)	Modbus Starting Address ⁽⁶⁾	No. of Elements	Applies to				Refer to Page
								M4, M5	M6	M8	Configurable	
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Harmonic Results; Even Harmonics 2...20 Parameters	R	•	F37	41	44	-	14		•	•		241
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Summary of Powermonitor 3000 Data Tables for all Communication Options

Data Table Name and Description ⁽¹⁾	Data Access	Indexed Reads ⁽³⁾	File No. ⁽⁴⁾ (DF1, CSP)	Remote I/O BT Size	Assy Instance (CIP, DNet)	Modbus Starting Address ⁽⁶⁾	No. of Elements	Applies to				Refer to Page
								M4, M5	M6	M8	Configurable	
Oscillograph Results Parameters	R	•	N40	61	48	-	29 or 59 ⁽¹⁴⁾		•	•		244
Load Factor Log Configuration/Read-back Select Parameters	R/W		N41	16	49,50	-	6		•	•		247
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Transient Analysis Configuration/Read-back Select Parameters	R/W		F43	44	52,53	-	13			•		249
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Harmonic Results; Odd Harmonics 43...63 Parameters	R	•	F48	45	60	-	14			•		256
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Single Parameter Read Parameters	R		-	-	80...103	-	1	•	•	•		267

⁽¹⁾ Event log user comment feature has been removed from master firmware revision 3.1 and later.

⁽²⁾ Supported only on 1404-xxxx-ENT-xx.

⁽³⁾ Data is most commonly read from this table by using the Indexed read method.

⁽⁴⁾ Powermonitor 3000 unit starts with file 9 to avoid any data-type incompatibility with SLC file numbers 1...8, which are of a fixed data type.

⁽⁵⁾ This is a reply to a PCCC diagnostic status request, used by RSWho to display text and an icon for the product.

⁽⁶⁾ Listed Modbus address is one-based. For zero-based addressing, subtract a value of one (1) from the listed address.

⁽⁷⁾ The default size is 2 input words and 2 output words for remote I/O. The input table (instance 1) default size is 6 words and is user configurable for DeviceNet, EtherNet/IP, and ControlNet networks. Remote I/O tables and the default DeviceNet input channel are PLC/SLC controllers compatible, but if you reconfigure the DeviceNet input channel (Instance 1), it may or may not be PLC/SLC controllers compatible (depending on the number of parameters configured).

⁽⁸⁾ Basic device configuration data table size is 8 elements for the M4 and M5, and 9 elements for the M6 and M8.

⁽⁹⁾ Table size increased in revision 3.1x of the master module firmware.

⁽¹⁰⁾ The size of the Trend log results table is 28 elements for the DeviceNet network and 44 elements for all other communication protocols.

⁽¹¹⁾ The size of the Event log results table is 14 elements for M4/M5, 17 elements for M6 and 18 elements for the M8.

- ⁽¹²⁾ The User-configured table results table is populated from the bottom up with the number of parameters you configured. The DeviceNet table must contain 14 elements or less to remain PLC/SLC controllers compatible.
- ⁽¹³⁾ Harmonic results; THD, crest factor, and more data table size is 18 elements for the M4 and M5 and 20 elements for the M6 and M8.
- ⁽¹⁴⁾ The Oscilloscope results and Transient capture results tables are 29 elements for the DeviceNet network and 59 elements for all other communication protocols.

Remote I/O, DeviceNet, EtherNet/IP and ControlNet I/O Messaging Parameters

CSP File No.	N/A
Remote I/O BT	N/A
CIP Assy. Inst.	1 (Read), 2 (Write)
No. of Elements	2 (Default)
User Configurable	Yes (DeviceNet, EtherNet/IP and ControlNet)
Data Type	Integer (Selectable as Floating Point with DeviceNet, EtherNet/IP and ControlNet)
Data Access	Read/Write
PM3000 Type	All

Remote I/O Discrete Data Provided by Powermonitor (Remote I/O Input Data)

Element No.	Element name	Range	Comment	
1	Relay, KYZ, and alarm bits	-	Bit	Description
			00...07	Reserved, used internally for BT information
			08	Form C relay state (setpoint output flag 1) 0 = De-energized and not forced 1 = Energized and not forced
			09	KYZ output state (setpoint output flag 2) 0 = De-energized and not forced 1 = Energized and not forced
			10	Setpoint output flag 3 state
			11	Setpoint output flag 4 state
			12	Setpoint output flag 5 state
			13	Setpoint output flag 6 state
			14	Setpoint output flag 7 state
			15	Setpoint output flag 8 state
2	Status input bits		Bit	Description
			00	Status input 1 state
			01	Status input 2 state
			02...05	Reserved, returns 0
			06	New oscillograph (M6, M8 only) Indicates at least one capture has been triggered, saved, and is ready to be read. This bit is cleared when all captures are cleared.
			07...11	Reserved, returns 0
			12...14	Reserved, used internally for BT information
			15	Reserved, returns 0

TIP

Data appears in the first two words of the input image table corresponding to the Powermonitor 3000 logical rack. For example, with the unit configured as Rack 1, Group 1 in a 1747-SN scanner residing in Slot 2, the data will appear in words I:2.8 and I:2.9 of the data table.

Remote I/O Discrete Data Accepted by Powermonitor Units (Master Output Data)

Element No.	Element name	Range	Comment
1	Relay control	0 or 128	0 (Bit 8 = 0): De-energize 128 (Bit 8 = 1): Energize Must be enabled by Control source parameter
2	KYZ control		

DeviceNet, EtherNet/IP, and ControlNet I/O Data Provided by Powermonitor Units (Scanner Input Data; Instance 1)

Element No.	Element name	Range	Comment
0	Relay output status	0...3	0 = De-energized & not forced 1 = Energized & not forced 2 = Forced de-energized 3 = Forced energized
1	Solid-state KYZ output status		
2	Alarm output word	0...FFFF	Bitfield indicates state of 16 alarm output flags; 0 = released, 1 = asserted Bit 0 = relay/setpoint output flag 1 Bit 1 = KYZ/setpoint output flag 2 Bit 2 = setpoint output flag 3 ... Bit 15 = setpoint output flag 16
3	Status inputs state	0...7	Bit 0 = status input 1; 0 = open, 1 = contact closure detected Bit 1 = status input 2; 0 = open, 1 = contact closure detected Bit 2 = demand sync timeout; 1 = the demand delay expired before the next expected external demand sync. This bit clears when the next external demand sync occurs. Refer to Advanced Device Configuration Parameters element 23. Bits 3...15 = unused (always 0)
4	Status input #1 counter	0...29,999	Counts to 29,999, rolls over to 0.
5	Status input #2 counter		

TIP

Size and content of Instance 1 may vary depending on user configuration. [Refer to User-configured Data Table on page 121](#) for more information.

DeviceNet, EtherNet/IP, and ControlNet I/O Data Accepted by Powermonitor Units (Scanner Output Data; Instance 2)

Element No.	Element name	Range	Default Value	Comment
0	Relay output	0...1	-	0 (Bit 8 = 0): De-energize 256 (Bit 8 = 1): Energize Must be enabled by Control source parameter
1	Solid-state KYZ output	0...1		

Discrete Data Parameters

CSP File No.	N9
Remote I/O BT	10
CIP Assy. Inst.	3
No. of Elements	6
User Configurable	No
Data Type	Integer
Data Access	Read Only
PM3000 Type	All

Discrete Data

Element No.	Modbus Address	Element name	Range	Comment
0	30001	Relay output status	0...3	0 = De-energized and not forced 1 = Energized and not forced 2 = Force De-energized 3 = Force Energized
1	30002	Solid-state KYZ output status		
2	30003	Alarm output word	0...FFFF	Bitfield indicating state of the 16 alarm output flags; 0 = released, 1 = asserted. Bit 0 = relay/setpoint output flag 1 Bit 1 = KYZ/setpoint output flag 2 Bit 2 = setpoint output flag 3 ... Bit 15 = setpoint output flag 16
3	30004	Status inputs state	0...7	Bit 0 = status input #1; 0 = open, 1 = contact closure detected Bit 1 = status input #2; 0 = open, 1 = contact closure detected Bit 2 = demand sync timeout; 1 = the demand delay expired before the next expected external demand sync. This bit clears when the next external demand sync occurs. Refer to Advanced Device Configuration Parameters element 23. Bits 3...15 = unused (always 0)
4	30005	Status input #1 counter	0... 29,999	Counts to 29,999, rolls over to 0
5	30006	Status input #2 counter		

Basic Device Configuration Parameters

CSP File No.	F10
Remote I/O BT	20
CIP Assy. Inst.	4 (Write), 5 (Read)
No. of Elements	8 (M4, M5), 9 (M6, M8)
User Configurable	No
Data Type	Floating point
Data Access	Read / Write
PM3000 Type	See table

Basic Device Configuration

Element No.	Modbus Address	Element name	M4 M5	M6	M8	Range	Units	Default Value	Comment
0	40001-2	Password	•	•	•	0...9999	-	0	Valid password required to change configuration. Returns -1
1	40003-4	Wiring mode	•	•	•	0...8	-	6	0 = Delta 3 CT 1 = Delta 2 CT 2 = Direct Delta 3 CT 3 = Direct Delta 2 CT 4 = Open Delta 3 CT 5 = Open Delta 2 CT 6 = Wye 7 = Single Phase 8 = Demo
2	40005-6	Potential transformer (PT) primary	•	•	•	1.0... 10,000,000.0	Volts	480.0	The high side of the PT ratio (xxx:xxx)
3	40007-8	PT secondary	•	•	•	1.0...600.0	Volts	480.0	The low side of the PT ratio (xxx:xxx)
4	40009-10	I1/I2/I3 current transformer (CT) Primary	•	•	•	1.0... 10,000,000.0	Amps	5.0	The high side of the CT ratio (xxx:xxx)
5	40011-12	I1/I2/I3 CT secondary	•	•	•	1.0...5.0	Amps	5.0	The low side of the CT ratio (xxx:xxx)
6	40013-14	I4 CT primary	•	•	•	1.0... 10,000,000.0	Amps	5.0	The high side of the I4 CT ratio (xxx:xxx)
7	40015-16	I4 CT secondary	•	•	•	1.0...5.0	Amps	5.0	The low side of the I4 CT ratio (xxx:xxx)
8	40017-18	Nominal system voltage		•	•	1.0... 10,000,000.0	Volts	480.0	Value is used in the default Sag and Swell setpoints. (M6 and M8 only) Nominal line-to-line voltage for Delta mode and line-to-neutral for Wye and single-phase modes

Date and Time Parameters

CSP File No.	N11
Remote I/O BT	12
CIP Assy. Inst.	6 (Write), 7 (Read)
No. of Elements	8
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Date and Time

Element No.	Modbus Address	Element name	Range	Default Value⁽²⁾	Comment
0	40101	Password	0...9999	0	Valid password required to change the date and time. Returns -1
1	40102	Date: year	1998...2097	1998	1 = January, 2 = February,...12 = December The internal clock adjusts the date for leap year.
2	40103	Date: month	1...12	1	
3	40104	Date: day	1...31 ⁽¹⁾	1	
4	40105	Time: hour	0...23	0	0 = 12am, 1 = 1am,...23 = 11pm The internal clock does not adjust for daylight saving time.
5	40106	Time: minute	0...59	0	
6	40107	Time: seconds	0...59	0	
7	40108	Time: hundredths of seconds	0...99	0	

⁽¹⁾ On a write, the maximum value for day depends on the values written to month and the year.

⁽²⁾ The data and time default values are set if one of the following three conditions occur:

- When the device is first powered-up at the factory.
 - A device power-up following the depletion of the real-time clock power source.
 - In the event of an abnormal condition which may cause the real-time clock to contain values which are not in the valid range.
- The date and time are not set to the default values when Restore Factory Defaults is performed via the display module or communication port.

Advanced Device Configuration Parameters

CSP File No.	N12
Remote I/O BT	26
CIP Assy. Inst.	8 (Write), 9 (Read)
No. of Elements	25
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Advanced Device Configuration

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40201	Password	0...9999	-	0	Required to change configuration data. Returns -1
1	40202	New password	0...9999	-	-1	-1 = no action; 0...9999 = new password; returns -1
2	40203	Demand period length	-99...+99	Min	15	Zero or negative demand period length enables external demand synch. Refer to Demand Calculation on page 35
3	40204	Number of demand periods	1...15	-	1	
4	40205	Predicted demand type	0...2	-	0	0 = instantaneous; 1 = 1st order; 2 = 2nd order
5	40206	KYZ control source	0...8	-	7	0 = None (forcing only) 1 = Wh Forward 2 = Wh Reverse 3 = VARh Forward 4 = VARh Reverse 5 = Vah 6 = Ah 7 = Setpoints 8 = Discrete control (RIO, DeviceNet)
6	40207	KYZ pulse output scale	1...30,000	-	10	Refer to Relay and KYZ Output Operations on page 137
7	40208	KYZ pulse output width	0, 40...2000	ms	0	0 = KYZ-style transition 40...2000 = pulse duration
8	40209	Relay control source	0...8	-	7	Same choices as KYZ control source
9	40210	Relay pulse output scale	1...30,000	-	10	Refer to Relay and KYZ Output Operations on page 137
10	40211	Relay pulse output width	0, 40...2000	ms	100	0 = KYZ-style transition 40...2000 = pulse duration
11	40212	RMS resolution	0...1	-	0 (M4) 1 (M5, 6 or 8)	0 = Nominal 1 = High
12	40213	RMS result averaging	0...1	-	0 (M4) 1 (M5, 6 or 8)	0 = No averaging. 1 = Average of the last 8 results
13	40214	Frequency averaging	0...1	-	1	0 = none; 1 = last 8 cycles

Advanced Device Configuration

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
14	40215	Restore factory default config	0...1	-	0	0 = No action 1 = Restore factory default settings
15	40216	Clear status input counters	0...3	-	0	0 = No action 2 = Clear counter #2 1 = Clear counter #1 3 = Clear both
16	40217	Wdog action	0...1	-	1	0 = Restart, log an event and halt operation 1 = Restart, log an event and resume Refer to Watchdog Timeout Action on page 55
17	40218	Force relay output	0...3	-	0	0 = No change 1 = Force energize the relay
18	40219	Force solid-state KYZ output	0...3	-	0	2 = Force de-energize the relay 3 = Release force of relay output Overrides setpoint or pulse output control
19	40220	Default relay state in event of communication loss	0...3	-	0	0 = Last state / resume 1 = Last state / freeze 2 = De-energize / resume 3 = De-energize / freeze Refer to Communication Loss Behavior on page 140
20	40221	Default KYZ state in event of communication loss				
21	40222	DM text scroll rate	0...1	-	1	0 = Slow; 1 = Fast
22	40223	Energy counter rollover	4...15	Digits	15	Refer to Configurable Energy Counter Rollover on page 35
23	40224	Forced demand sync delay	0...900	s	10	0 = Disable, 1...900 = number of seconds delay
24	40225	Reserved	0	-	0	Reserved. Must be 0 on a write, returns 0
25	40226	Reserved	0	-	0	Reserved. Must be 0 on a write, returns 0

Native Communication Configuration Parameters

CSP File No.	N13
Remote I/O BT	11
CIP Assy. Inst.	10 (Write), 11 (Read)
No. of Elements	10
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Native Communication Configuration

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40301	Password	0...9999	-	0	Valid password required to change configuration data. Returns -1
1	40302	Protocol	0...3	-	0	Communication protocol for the native communication port. 0 = DF1 half-duplex slave 1 = Modbus RTU slave 2 = Auto Sense - Selects the protocol based on the incoming communication packets 3 = DF1 full-duplex
2	40303	Delay	0...15	5 ms	2 (10ms)	Specifies the delay before responding to an external request, useful with slow external devices (such as RF modems)
3	40304	Baud rate	0...6	-	3	0 = 1.2 Kbps 1 = 2.4 Kbps 2 = 4.8 Kbps 3 = 9.6 Kbps 4 = 19.2 Kbps 5 = 38.4 Kbps 6 = 57.6 Kbps
4	40305	Device address	1...247	-	(1)	Identifies the device on a multi-drop network. DF1 master typically uses 0. The broadcast address is 255
5	40306	Data format	0...2	-	0	Parity, number of data bits, number of stop bits 0 = No parity, 8 data bits, 1 stop bit 1 = Odd parity, 8 data bits, 1 stop bit 2 = Even parity, 8 data bits, 1 stop bit
6	40307	Inter-Character Timeout	0...6553	ms	0	Specifies the minimum delay between characters that indicates the end of a message packet. 0 = 3.5 character times
7	40308	Error checking	0...1	-	0	0 = CRC 1 = BCC
8	40309	Reserved	0	-	0	Returns 0
9	40310					

(1) The default address is the Device ID, which is factory assigned and is found on the label on the side of the master module. The device ID is incremented for each device.

Optional Communication Configuration Parameters

CSP File No.	N14
Remote I/O BT	24
CIP Assy. Inst.	12 (Write), 13 (Read)
No. of Elements	20
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

TIP

Select the table that applies to your Powermonitor 3000 unit.

Ethernet

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40401	Password	0...9999	-	0	Valid password required to change configuration data. Returns -1
1	40402	IP address byte a	0...255	-	192	Format: aaa.bbb.ccc.ddd. Static IP address of this device (for example 130.151.32.86). If connected to a network, IP address must be unique. (255.255.255.255 is not permitted.)
2	40403	IP address byte b			168	
3	40404	IP address byte c			254	
4	40405	IP address byte d			Device ID	
5	40406	Subnet mask byte a	0...255	-	255	Format aaa.bbb.ccc.ddd.
6	40407	Subnet mask byte b			255	
7	40408	Subnet mask byte c			0	
8	40409	Subnet mask byte d			0	
9	40410	Gateway IP address byte a	0...255	-	128	IP address of the gateway on this subnet used to route messages to other subnets (wide area networking).
10	40411	Gateway IP address byte b			1	
11	40412	Gateway IP address byte c			1	
12	40413	Gateway IP address byte d			1	
13	40414	Protocol selection ⁽¹⁾	0...2	-	0	0 = CIP, 1 = CSP, 2 = CIP/CSP
14	40415	Reserved	0	-	0	Reserved. Must be 0 on a write, returns 0
15	40416					
16	40417					
17	40418					
18	40419					
19	40420					

⁽¹⁾ Master module version 4 or later, Ethernet firmware version 3 or later.

ControlNet

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40401	Password	0...9999	-	0	Valid password required to change configuration data. Returns -1
1	40402	MAC ID	0...99	-	99	On a write, sets MAC ID (node address) of Powermonitor 3000 unit on ControlNet network
2	40403	Reserved	0	-	0	Reserved. Must be 0 on a write, returns 0
3	40404					
4	40405					
5	40406					
6	40407					
7	40408					
8	40409					
9	40410					
10	40411					
11	40412					
12	40413					
13	40414					
14	40415					
15	40416					
16	40417					
17	40418					
18	40419					
19	40420					

Remote I/O

Element No.	Modbus Address	Element name	Range	Default Value	Comment
0	40401	Password	0...9999	0	Valid password required to change configuration data. Returns -1
1	40402	Logical rack address	1...63	1	The scanner uses rack address 0
2	40403	Module group	0,2,4,6	0	0 = Group 0 (acts like the first 2 rack slots) 2 = Group 2 4 = Group 4 6 = Group 6
3	40404	Last rack	0...1	0	0 = No 1 = Yes
4	40405	Baud rate	0...2	0	0 = 57.6 Kbps 1 = 115.2 Kbps 2 = 230.4 Kbps
5	40406	Reserved	0	0	Reserved. Must be 0 on a write, returns 0
6	40407				
7	40408				
8	40409				
9	40410				
10	40411				
11	40412				
12	40413				
13	40414				
14	40415				
15	40416				
16	40417				
17	40418				
18	40419				
19	40420				

DeviceNet

Element No.	Modbus Address	Element name	Range	Default Value	Comment
0	40401	Password	0...9999	0	Valid password required to change configuration data. Returns -1
1	40402	Node address (MAC ID)	0...64	63	Address 64 enables remote node address programming; there is no actual node address of 64 defined for the DeviceNet network
2	40403	Baud rate	0...4	0	0 = 125 Kbps 1 = 250 Kbps 2 = 500 Kbps 3 = Auto 4 = Programmable
3	40404	Bus Off Interrupt Action	0...1	0	0 = hold CAN chip in reset 1 = reset CAN chip and continue communication
4	40405	Floating point data format	0...1	0	0 = Compliant with prior versions, word order swapped 1 = CIP compliant, little Endian
5	40406	Reserved	0	0	Reserved. Must be 0 on a write, returns 0
6	40407				
7	40408				
8	40409				
9	40410				
10	40411				
11	40412				
12	40413				
13	40414				
14	40415				
15	40416				
16	40417				
17	40418				
18	40419				
19	40420				

RS-232

Element No.	Modbus Address	Element name	Range	Default Value	Comment
0	40401	Password	0...9999	0	Required to change configuration data. Returns -1
1	40402	Hardware port	0...1	0	Select active port 0 = RS-232 port 1 = Native RS-485 port
2	40403	Protocol	0...3	0	Communication protocol for the native communication port. 0 = DF1 half-duplex slave 1 = Modbus RTU slave 2 = Auto Sense - Selects the protocol based on the incoming communication packets 3 = DF1 full-duplex
3	40404	Delay	0...15	2 (10 ms)	Specifies the delay before responding to an external request., useful with slow external devices (such as RF modems)
4	40405	Baud rate	0... 6	3	0 = 1.2 Kbps 1 = 2.4 Kbps 2 = 4.8 Kbps 3 = 9.6 Kbps 4 = 19.2 Kbps 5 = 38.4 Kbps 6 = 57.6 Kbps
5	40406	RS-232 address	1...247	(1)	Identifies the device on the link. 0 is typically used by the DF1 master. 255 is the broadcast address
6	40407	Data format	0...2	0	Parity, number of data bits, number of stop bits 0 = No parity, 8 data bits, 1 stop bit 1 = Even parity, 8 data bits, 1 stop bit 2 = Odd parity, 8 data bits, 1 stop bit
7	40408	Flow Control (Handshaking)	0...1	0	Data flow control for RS-232/RS-485 port. 0 = None 1 = Hardware RTS/CTS
8	40409	RTS On Delay	0...9995 ms	0	
9	40410				
10	40411	Inter-character timeout			Specifies the minimum delay between characters that indicates the end of a message packet. 0 = 3.5 character times.
11	40412	Error checking	0...1	0	0 = CRC 1 = BCC

RS-232

Element No.	Modbus Address	Element name	Range	Default Value	Comment
12	40413	Reserved	0	0	Reserved. Must be 0 on a write, returns 0
13	40414				
14	40415				
15	40416				
16	40417				
17	40418				
18	40419				
19	40420				

⁽¹⁾ The default address is the same as the Device ID, which is assigned at the factory and can be found printed on the white label on the side of the master module. The device ID is incremented for each device.

Metering Voltage, Current, and Frequency Result Parameters

CSP File No.	F15
Remote I/O BT	38
CIP Assy. Inst.	14
No. of Elements	14
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Metering Voltage, Current, and Frequency Result

Element No.	Modbus Address	Element name	Units	Range	Comment
0	30101-2	L1 Current	Amps (A)	0.0...999.9x10 ²¹	Refer to Voltage, Current, and Frequency Results on page 30.
1	30103-4	L2 Current		0.0...999.9x10 ²¹	
2	30105-6	L3 Current		0.0...999.9x10 ²¹	
3	30107-8	Avg. Current		0.0...999.9x10 ²¹	
4	30109-10	L1-N Voltage	Volts (V)	0.0...999.9x10 ²¹	
5	30111-12	L2-N Voltage		0.0...999.9x10 ²¹	
6	30113-14	L3-N Voltage		0.0...999.9x10 ²¹	
7	30115-16	Avg. L-N Voltage		0.0...999.9x10 ²¹	
8	30117-18	L1-L2 Voltage		0.0...999.9x10 ²¹	
9	30119-20	L2-L3 Voltage		0.0...999.9x10 ²¹	
10	30121-22	L3-L1 Voltage		0.0...999.9x10 ²¹	
11	30123-24	Avg L-L Voltage		0.0...999.9x10 ²¹	
12	30125-26	Frequency, last cycle	Hertz (Hz)	40.0...75.0	Returns 0 or 999.0 if out of range.
13	30127-28	Metering iteration	-	0...32,767	Increments by 1...32,767, rolls over to 0.

Metering Sequence Voltage, and Current Results Parameters

CSP File No.	F16
Remote I/O BT	27
CIP Assy. Inst.	15
No. of Elements	11
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Metering Sequence Voltage, and Current Results

Element No.	Modbus Address	Element name	Units	Range	Comment
0	30201-02	L4 (Zero sequence) Current	Amps (A)	$0.0 \dots 999.9 \times 10^{21}$	Refer to Symmetrical Component Analysis Results on page 31.
1	30203-04	Positive Sequence Current		$0.0 \dots 999.9 \times 10^{21}$	
2	30205-06	Negative Sequence Current		$0.0 \dots 999.9 \times 10^{21}$	
3	30207-08	% Current unbalance	Per Cent	0.0...100.0	
4	30209-10	Positive Sequence Voltage	Volts (V)	$0.0 \dots 999.9 \times 10^{21}$	
5	30211-12	Negative Sequence Voltage		$0.0 \dots 999.9 \times 10^{21}$	
6	30213-14	% Voltage unbalance	Per Cent	0.0...100.0	
7	30215-16	Phase rotation	-	0...2	0 = No rotation. 1 = ABC rotation. 2 = ACB rotation.
8	30217-18	Average frequency	Hertz (Hz)	40.0...75.0	Average of the last 1 or 8 cycles. Returns 0 or 999.0 if out of range.
9	30219-20	Frequency source	-	0...2	0 = V1, 1 = V2, 2 = V3.
10	30221-22	Metering iteration	-	0...32,767	Increments by 1...32,767, rolls over to 0.

Metering Power Results Parameters

CSP File No.	F17
Remote I/O BT	31
CIP Assy. Inst.	16
No. of Elements	13
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Metering Power Results

Element No.	Modbus Address	Element name	Units	Range	Comment
0	30301-02	L1 Real Power	Watts (W)	$0.0 \dots 999.9 \times 10^{22}$	Real power per phase, signed to show direction. Refer to Power Results on page 32.
1	30303-04	L2 Real Power		$0.0 \dots 999.9 \times 10^{22}$	
2	30305-06	L3 Real Power		$0.0 \dots 999.9 \times 10^{22}$	
3	30307-08	Total Real Power		$0.0 \dots 999.9 \times 10^{22}$	Total power signed to show direction.
4	30309-10	L1 Reactive Power	Volt-amps reactive (VAR)	$0.0 \dots 999.9 \times 10^{22}$	Reactive power per phase, signed to show direction.
5	30311-12	L2 Reactive Power		$0.0 \dots 999.9 \times 10^{22}$	
6	30313-14	L3 Reactive Power		$0.0 \dots 999.9 \times 10^{22}$	
7	30315-16	Total Reactive Power		$0.0 \dots 999.9 \times 10^{22}$	Total reactive power, signed to show direction.
8	30317-18	L1 Apparent Power	Volt-amps (VA)	$0.0 \dots 999.9 \times 10^{22}$	Apparent power per phase.
9	30319-20	L2 Apparent Power		$0.0 \dots 999.9 \times 10^{22}$	
10	30321-22	L3 Apparent Power		$0.0 \dots 999.9 \times 10^{22}$	
11	30323-24	Total Apparent Power		$0.0 \dots 999.9 \times 10^{22}$	Total apparent power.
12	30325-26	Metering iteration	-	0...32,767	Increments by 1...32,767, rolls over to 0.

Metering Demand Results Parameters

CSP File No.	F18
Remote I/O BT	25
CIP Assy. Inst.	17
No. of Elements	10
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Metering Demand Results

Element No.	Modbus Address	Element name	Units	Range	Comment
0	30401-02	Demand Current	Amps (A)	0.0...999.9x10 ²¹	Refer to Energy Results on page 34.
1	30403-04	Demand Power	Watts (W)	0.0...999.9x10 ²¹	
2	30405-06	Demand Reactive Power	VAR	0.0...999.9x10 ²¹	
3	30407-08	Demand Apparent Power	VA	0.0...999.9x10 ²¹	
4	30409-10	Projected Demand I	Amps	0.0...999.9x10 ²¹	Refer to Projected Demand Calculation on page 36.
5	30411-12	Projected Demand W	Watts	0.0...999.9x10 ²¹	
6	30413-14	Projected Demand VAR	VAR	0.0...999.9x10 ²¹	
7	30415-16	Projected Demand VA	VA	0.0...999.9x10 ²¹	
8	30417-18	Elapsed demand period time	Minutes	0.0...999.9x10 ²¹	The time elapsed within the current demand period.
9	30419-20	Metering iteration	-	0...32,767	Increments by 1...32,767, rolls over to 0.

Metering Power Factor Results Parameters

CSP File No.	F19
Remote I/O BT	33
CIP Assy. Inst.	18
No. of Elements	13
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Metering Power Factor Results

Element No.	Modbus Address	Element name	Units	Range	Comment
0	30501-02	L1 True Power Factor	Percent	-100...100	Ratio between power and apparent power. + = Lead - = Lag
1	30503-04	L2 True Power Factor		-100...100	
2	30505-06	L3 True Power Factor		-100...100	
3	30507-08	Three-phase True PF		-100...100	
4	30509-10	L1 Displacement Power Factor		-100...100	Cosine of the phase angle between the fundamental voltage and current. + = Lead - = Lag
5	30511-12	L2 Displacement Power Factor		-100...100	
6	30513-14	L3 Displacement Power Factor		-100...100	
7	30515-16	Three-phase Displacement PF		-100...100	
8	30517-18	L1 Distortion Power Factor		0...100	The ratio between the magnitude of the fundamental and the sum of the magnitudes for all of the current harmonics.
9	30519-20	L2 Distortion Power Factor		0...100	
10	30521-22	L3 Distortion Power Factor		0...100	
11	30523-24	Three-phase Distortion PF		0...100	
12	30525-26	Metering iteration	-	0...32,767	Increments by 1...32,767, rolls over to 0.

Metering Real and Apparent Energy Results Parameters

CSP File No.	N20
Remote I/O BT	29
CIP Assy. Inst.	19 (Write), 20 (Read)
No. of Elements	23
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Metering Real and Apparent Energy Results

Element No.	Modbus Address	Element Name	Range	Units	Default Value	Comment
0	40501	Password	0...9999	-	0	Required to clear or preset energy counters. Returns -1.
1	40502	Parameter select	0 to 7 (bitfield)	-		Refer to How to Clear or Preset Energy Counters by Using Communication on page 120.
2	40503	kWh forward ### x 10 ⁹ ### x 10 ⁶ ### x 10 ³ ### x 10 ⁰ ### x 10 ⁻³	-999...999	kWh		
3	40504					
4	40505					
5	40506					
6	40507					
7	40508	kWh reverse ### x 10 ⁹ ### x 10 ⁶ ### x 10 ³ ### x 10 ⁰ ### x 10 ⁻³	-999...999			
8	40509					
9	40510					
10	40511					
11	40512					
12	40513	kWh net ### x 10 ⁹ ### x 10 ⁶ ### x 10 ³ ### x 10 ⁰ ### x 10 ⁻³	-999...999			
13	40514					
14	40515					
15	40516					
16	40517					
17	40518	kVAh ### x 10 ⁹ ### x 10 ⁶ ### x 10 ³ ### x 10 ⁰ ### x 10 ⁻³	-999...999	KVAh		
18	40519					
19	40520					
20	40521					
21	40522					
22	40523	Metering iteration	0...32,767	-		Increments by 1...32,767, rolls over to 0.

Metering Reactive Energy and Amp-hour Results Parameters

CSP File No.	N21
Remote I/O BT	30
CIP Assy. Inst.	21 (Write), 22 (Read)
No. of Elements	23
User Configurable	No
Data Type	Integer
Data Access	Read/Write
PM3000 Type	All

Metering Reactive Energy and Amp-hour Results

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40601	Password	0...9999	-	0	Required to clear or preset energy counters. Returns -1.
1	40602	Parameter select	0...7	-		Refer to How to Clear or Preset Energy Counters by Using Communication on page 120.
2	40603	kVARh forward	-999...999	kVARh		
3	40604					
4	40605					
5	40606					
6	40607					
7	40608	kVARh reverse	-999...999			
8	40609					
9	40610					
10	40611					
11	40612					
12	40613	kVARh net	-999...999			
13	40614					
14	40615					
15	40616					
16	40617					
17	40618	kAh	-999...999	kAh		
18	40619					
19	40620					
20	40621					
21	40622					
22	40623	Metering iteration	0...32,767	-		Increments by 1...32,767, rolls over to 0.

Selftest/Diagnostic Results Parameters

CSP File No.	N22
Remote I/O BT	36
CIP Assy. Inst.	23
No. of Elements	27
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	All

Selftest/Diagnostic Results

Element No.	Modbus Address	Element name	Range	Comment
0	30601	Bulletin number	1404	
1	30602	Series	0...8	0 = A, 1 = B
2	30603	Overall status	-	0 = OK
3	30604	Data Acquisition status	-	0 = OK bit 0 = overall status; 0 = pass, 1 = fail bit 1 = reserved bit 2 = data bus connection failure bit 3 = address test failure
4	30605	Data FLASH status	-	0 = OK
5	30606	Real-time clock status	-	0 = OK
6	30607	RTC NVRAM status	-	0 = OK Non-zero indicates corruption of nonvolatile memory. This does not cause product to shutdown. The error is cleared on a reset/power cycle. If this error is detected, date/time, and energy values are reset.
7	30608	Option communication status	-	0 = OK or no optional communication present
8	30609	Display module status	-	0 = OK or no DM connected
9	30610	Watchdog status	-	0 = OK
10	30611	Code FLASH status	-	0 = OK bit 0 = overall status; 0 = pass, 1 = fail bit 1 = boot code checksum failure bit 2 = application code checksum failure bit 3 = calibration CRC failure bit 4 = no calibration data bit 5 = wrong application firmware loaded
11	30612	RAM status	-	0 = OK bit 0 = read/write test failure
12	30613	Application FRN	0...9999	100 indicates version 1.00, 103 indicates version 1.03...
13	30614	Boot code FRN	0...9999	100 indicates version 1.00, 101 indicates version 1.01...

Selftest/Diagnostic Results

Element No.	Modbus Address	Element name	Range	Comment
14	30615	ASIC build #	0...9999	Revision number of the code that was used to fabricate the ASIC.
15	30616	Option communication FRN	0...9999	100 indicates version 1.00, 103 indicates version 1.03... 0 = none (catalog numbers ending in -000, -232)
16	30617	Display module FRN	0...9999	104 indicates version 1.04, 105 indicates version 1.05... Returns 0 if no DM connected
17	30618	Reserved	0	Returns 0
18	30619	Digital board revision	0...7	0 = 02A, 1 = 03A...
19	30620	Analog board revision	0...7	0 = 02A, 1 = 03A...
20	30621	Reserved	0	Returns 0
21	30622	Reserved	0	Returns 0
22	30623	MM Device ID	0...255	Sequentially assigned at time of manufacture. May not be changed.
23	30624	Master module type, current	4,5,6, or 8	4 = M4, 5 = M5, 6 = M6, 8 = M8; reflects any upgrades
24	30625	Display module type	0...1	0 = No display module connected 1 = 1404-DM connected to master module
25	30626	Option communication type	-	00 = No optional communication (native RS-485 only) 81 = DeviceNet version 1 82 = ControlNet 84 = Remote I/O 86 = RS-232 88 = DeviceNet version 2 89 = IEC870 comm card
26	30627	Accuracy Class	0...2	Indicates revenue metering accuracy class as manufactured (refer to page 29). 0 = Class 1 1 = Class 0.5 2 = Class 0.2

TIP

This is not truly a data table, but a reply to a PCCC diagnostic status request (used by RSWho to display text and an icon for the Powermonitor 3000 unit). This data is not accessible using Modbus.

DF1 PCCC Diagnostic Status Reply Parameters

Byte	Bits	Contents	Description
1	0...1	Mode/status	Unused
	2...3		
	4...7		
2	0...7	Type extender	EE
3	0...7	Extended interface type	36h = DF1 half-duplex slave (via native RS485 port or RS-232 port) 65h = Ethernet
4	0...7	Extended processor type	8Ah; 1404 Powermonitor 3000 products

DF1 PCCC Diagnostic Status Reply Parameters

Byte	Bits	Contents	Description
5	0...4	Series/revision	Unused
	5...7		
6...16	All	Catalog number (in ASCII)	Catalog number written into the device at time of production or calibration. For example, 1404-M4-05-A-RIO
17...24	All	Product Specific	Unused

Setpoint Setup/Read-back Select and Status Parameters

CSP File No.	N23
Remote I/O BT	22
CIP Assy. Inst.	24 (Write), 25 (Read)
No. of Elements	16
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Setpoint Setup/Read-back Select and Status

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
0	40701	Password	0...9999	-	0	Required for configuration, -1 for readback select, returns -1.
1	40702	Setpoint number	1...10 (M4, M5) 1...20 (M6, M8)	-	-	Refer to Writing Setpoint Configuration by Using Communication on page 134.
2	40703	Read-back mode	0...1	-	0	
3	40704	Setpoint type	0...52	-	0 ⁽¹⁾	
4	40705	Evaluation condition	0...5	-	0	
5	40706	High limit Integer	0...9999	Depends on setpoint type	0 ⁽¹⁾	
6	40707	High limit Exponent	-4...21		0 ⁽¹⁾	
7	40708	Low limit Integer	0...9999		0 ⁽¹⁾	
8	40709	Low Limit Exponent	-4...21		0 ⁽¹⁾	
9	40710	Action delay	0...3600 (M4, M5) 0...30,000 (M6, M8)	Seconds (M4, M5) 0.1 s (M6, M8)	0	
10	40711	Release delay	0...3600 (M4, M5) 0...30,000 (M6, M8)	Seconds (M4, M5) 0.1 s (M6, M8)	0	
11	40712	Output action	0...32 (M4, M5) 0...43 (M6, M8)	-	0 ⁽¹⁾	
12	40713	Status	0...1	-	0	

Setpoint Setup/Read-back Select and Status

Element No.	Modbus Address	Element name	Range	Units	Default Value	Comment
13	40714	Accumulated time Integer	0...9999	Seconds	-	
14	40415	Accumulated time Exponent	-1...21	-	-	
15	40716	Clear time accumulator command	0...1	-	0	

(1) On the M6 and M8, setpoint #19 and #20 default to detect voltage sag and voltage swell. See Sag and Swell, [page 174](#).

List of Setpoint Types Parameters

Applies to	Setpoint Setup/Read-back Select and Status Parameters on page 215 .
PM3000 Type	See table

List of Setpoint Types

Param. No.	Parameter Name	M4 M5	M6	M8	Comment
0	Not used	•	•	•	Disables the setpoint
1	Voltage ⁽¹⁾	•	•	•	Refer to Metering Voltage, Current, and Frequency Result Parameters
2	Current ⁽¹⁾	•	•	•	
3	Voltage unbalance	•	•	•	
4	Current unbalance	•	•	•	Refer to Metering Sequence Voltage, and Current Results Parameters
5	Neutral current	•	•	•	
6	W	•	•	•	
7	VAR	•	•	•	Refer to Metering Power Results Parameters
8	VA	•	•	•	
9	Total true PF	•	•	•	
10	Total disp PF	•	•	•	Refer to Metering Power Factor Results Parameters
11	Total dist PF	•	•	•	
12	W demand	•	•	•	
13	VAR demand	•	•	•	Refer to Metering Demand Results Parameters
14	VA demand	•	•	•	
15	Amp demand	•	•	•	
16	Projected amp demand	•	•	•	
17	Projected W Demand	•	•	•	
18	Projected VAR Demand	•	•	•	
19	Projected VA Demand	•	•	•	Refer to Metering Voltage, Current, and Frequency Result Parameters
20	Frequency	•	•	•	
21	Phase rotation	•	•	•	

List of Setpoint Types

Param. No.	Parameter Name	M4 M5	M6	M8	Comment
22	Crest factor voltage	•	•	•	Refer to Harmonic Results: THD, Crest Factor, and More Parameters.
23	Crest factor current	•	•	•	
24	Crest factor I4	•	•	•	
25	IEEE THD voltage ⁽¹⁾	•	•	•	
26	IEEE THD current ⁽¹⁾	•	•	•	
27	IEEE THD I4	•	•	•	
28	IEC THD voltage ⁽¹⁾	•	•	•	
29	IEC THD current ⁽¹⁾	•	•	•	
30	IEC THD I4	•	•	•	Refer to Discrete Data Parameters.
31	Status input 1	•	•	•	
32	Status input 2	•	•	•	
33	Any status input ⁽¹⁾	•	•	•	Refer to Setpoint Output Actions Parameters.
34	Setpoint #1 time accumulator	•	•	•	
35	Setpoint #2 time accumulator	•	•	•	
36	Setpoint #3 time accumulator	•	•	•	
37	Setpoint #4 time accumulator	•	•	•	
38	Setpoint #5 time accumulator	•	•	•	
39	Setpoint #6 time accumulator	•	•	•	
40	Setpoint #7 time accumulator	•	•	•	
41	Setpoint #8 time accumulator	•	•	•	
42	Setpoint #9 time accumulator	•	•	•	
43	Setpoint #10 time accumulator	•	•	•	Refer to Sag and Swell on page 174
44	Voltage Sag ⁽²⁾		•	•	
45	Voltage Swell ⁽²⁾		•	•	Refer to Harmonic Results: THD, Crest Factor, and More Parameters.
46	Transient detected ⁽²⁾			•	
47	Avg IEEE THD V	•	•	•	
48	Avg IEEE THD I	•	•	•	
49	Avg IEC thd V	•	•	•	
50	Avg IEC thd I	•	•	•	
51	Avg Crest Factor V	•	•	•	
52	Avg Crest Factor I	•	•	•	

⁽¹⁾ A setpoint activates when the magnitude of any phase passes the activation limit and releases when all phases pass the release limit in the appropriate direction for the setpoint evaluation condition.

⁽²⁾ These setpoint types apply only to the applicable Powermonitor 3000 models and will appear as inactive on other models.

Setpoint Output Actions Parameters

Applies to	Refer to Setpoint Setup/Read-back Select and Status Parameters on page 215
PM3000 Type	See table

Setpoint Output Actions

Param. #	Parameter Name	M4 M5	M6	M8	Comment
0	None	•	•	•	No output action, but recorded in the event log and Setpoint status recorded
1	Energize relay and set alarm flag 1	•	•	•	Refer to Discrete Data Parameters.
2	Energize KYZ and set alarm flag 2	•	•	•	
3	Set alarm flag 3	•	•	•	
4	Set alarm flag 4	•	•	•	
5	Set alarm flag 5	•	•	•	
6	Set alarm flag 6	•	•	•	
7	Set alarm flag 7	•	•	•	
8	Set alarm flag 8	•	•	•	
9	Set alarm flag 9	•	•	•	
10	Set alarm flag 10	•	•	•	
11	Set alarm flag 11	•	•	•	
12	Set alarm flag 12	•	•	•	
13	Set alarm flag 13	•	•	•	
14	Set alarm flag 14	•	•	•	
15	Set alarm flag 15	•	•	•	
16	Set alarm flag 16	•	•	•	
17	Save a trend log record	•	•	•	Saves record even if periodic trending is disabled
18	Clear kWh result	•	•	•	
19	Clear kVARh result	•	•	•	
20	Clear kVAh result	•	•	•	
21	Clear Ah result	•	•	•	
22	Clear all energy results	•	•	•	

Setpoint Output Actions

Param. #	Parameter Name	M4 M5	M 6	M 8	Comment
23	Clear setpoint #1 time	•	•	•	Clears the corresponding setpoint time accumulator
24	Clear setpoint #2 time	•	•	•	
25	Clear setpoint #3 time	•	•	•	
26	Clear setpoint #4 time	•	•	•	
27	Clear setpoint #5 time	•	•	•	
28	Clear setpoint #6 time	•	•	•	
29	Clear setpoint #7 time	•	•	•	
30	Clear setpoint #8 time	•	•	•	
31	Clear setpoint #9 time	•	•	•	
32	Clear setpoint #10 time	•	•	•	
33	Clear setpoint #11 time		•	•	
34	Clear setpoint #12 time		•	•	
35	Clear setpoint #13 time		•	•	
36	Clear setpoint #14 time		•	•	
37	Clear setpoint #15 time		•	•	
38	Clear setpoint #16 time		•	•	
39	Clear setpoint #17 time		•	•	
40	Clear setpoint #18 time		•	•	
41	Clear setpoint #19 time		•	•	
42	Clear setpoint #20 time		•	•	
43	Capture oscillograph		•	•	Triggers a capture per the current oscillography configuration

Trend Log Configuration/Read-back Record Select Parameters

CSP File No.	N24
Remote I/O BT	34
CIP Assy. Inst.	26 (Write), 27 (Read)
No. of Elements	26
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Trend Log Configuration/Read-back Record Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	40801	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1
1	40802	DeviceNet unique write identifier	-32,768...32,767	0	Refer to DeviceNet Unique Write Identifier on page 103
2	40803	Reserved	0	0	Must be 0 on a write; returns 0
3	40804	Read-back mode	0...6	2	Refer to Setting up the Trend Log on page 151 , and Reading Data from the Trend Log on page 152
4	40805	Logging interval	-1...3600	900 (15 min)	Expressed in seconds -1 = synchronize logging with demand interval 0 = disable periodic logging
5	40806	Logging mode	0...1	0	0 = Overwrite 1 = Fill and hold
6	40807	Clear trend log command	0...1	0	0 = no action 1 = clear trend log; returns 0
7	40808	Total records logged x 1000	0...999	-	Number of records = element 7 x 1000 + element 8
8	40809	Total records logged x 1	0...999	-	
9	40810	Reserved	0	-	Must be 0 on a write; returns 0
10	40811	Parameter #1 selection	1...301	122	Refer to Setting up the Trend Log on page 151 Defaults: Parameter 1: 122, Net Kilowatt-hours Parameter 2: 126, Net kVAR-hours Parameter 3: 100, Demand watts
11	40812	Parameter #2 selection	0...301	126	
12	40813	Parameter #3 selection		100	
13	40814	Parameter #4 selection		0	
14	40815	Parameter #5 selection			
15	40816	Parameter #6 selection			
16	40817	Parameter #7 selection			
17	40818	Parameter #8 selection			

Trend Log Configuration/Read-back Record Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
18	40819	Parameter #9 selection ⁽¹⁾	0...301	0	
19	40820	Parameter #10 selection			
20	40821	Parameter #11 selection			
21	40822	Parameter #12 selection			
22	40823	Parameter #13 selection			
23	40824	Parameter #14 selection			
24	40825	Parameter #15 selection			
25	40826	Parameter #16 selection			

⁽¹⁾ For DeviceNet Powermonitor units you may configure parameters 9...16 but the [Trend Log Results Parameters](#) table returns only the first eight parameters.

Trend Log Results Parameters

CSP File No.	F25
Remote I/O BT	48
CIP Assy. Inst.	28
No. of Elements	14 (DeviceNet network only), 22 (All other communication types)
User Configurable	Yes
Data Type	Floating Point
Data Access	Read only
PM3000 Type	All

Trend Log Results

Element No.	Modbus Address	Element Name	Range	Comment
0	30701-02	Reserved	0	Returns 0
1	30703-04	Internal Identifier	0...15	Increment from 1...15 for each record, rolls to 0
2	30705-06	Timestamp; Year Month/Date Hour/minute Seconds/hsec	1998...2097	Date and time record was recorded. Refer to Expressing Data in Data Tables on page 82
3	30707-08		0101...1231	
4	30709-10		0000...2359	
5	30711-12		0000...5999	

Trend Log Results

Element No.	Modbus Address	Element Name	Range	Comment
6	30713-14	User selected parameter #1	-	The values of parameters that were configured.
7	30715-16	User selected parameter #2	-	
8	30717-18	User selected parameter #3	-	
9	30719-20	User selected parameter #4	-	
10	30721-22	User selected parameter #5	-	
11	30723-24	User selected parameter #6	-	
12	30725-26	User selected parameter #7	-	
13	30727-28	User selected parameter #8	-	
14	30729-30	User selected parameter #9	-	
15	30731-32	User selected parameter #10	-	
16	30733-34	User selected parameter #11	-	
17	30735-36	User selected parameter #12	-	
18	30737-38	User selected parameter #13	-	
19	30739-40	User selected parameter #14	-	
20	30741-42	User selected parameter #15	-	
21	30743-44	User selected parameter #16	-	

Min/Max Log Configuration/Read-back Select Parameters

CSP File No.	N26
Remote I/O BT	13
CIP Assy. Inst.	29 (Write), 30 (Read)
No. of Elements	9
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Min/Max Log Configuration/Read-back Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	40901	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1.
1	40902	Min/max parameter to read	0...73	1	Refer to Interfacing with the Min/Max Log by Using Communication on page 154.
2	40903	Read-back mode	0...1	0	
3	40904	Enable/disable Min/max log	0...1	1	
4	40905	Clear min/max log	0...1	0	
5	40906	Timestamp of last min/max clear; year month/day hour/minute second/hsec	1998...2097	-	
6	40907		0101...1231	-	
7	40908		0000...2359	-	
8	40909		0000...5999	-	

Min/Max Log Parameter List Parameters

Applies to	Min/Max Log Configuration/Read-back Select Parameters on page 223 Min/Max Log Results Parameters on page 227
PM3000 Type	All

Min/Max Log Parameter List

Param No.	Parameter Name	Comment
0	L1 Current	Refer to Metering Voltage, Current, and Frequency Result Parameters
1	L2 Current	
2	L3 Current	
3	Avg Current	
4	L1-N Voltage	
5	L2-N Voltage	
6	L3-N Voltage	
7	Avg L-N Voltage	
8	L1-L2 Voltage	
9	L2-L3 Voltage	
10	L3-L1 Voltage	
11	Avg L-L Voltage	
12	Frequency, last cycle	Refer to Metering Sequence Voltage, and Current Results Parameters
13	L4 Current	
14	Positive Sequence Current	
15	Negative Sequence Current	
16	% Current unbalance	
17	Positive Sequence Voltage	
18	Negative Sequence Voltage	
19	% Voltage unbalance	
20	Average frequency	

Min/Max Log Parameter List

Param No.	Parameter Name	Comment
21	L1 Real Power	Refer to Metering Power Results Parameters
22	L2 Real Power	
23	L3 Real Power	
24	Total Real Power	
25	L1 Reactive Power	
26	L2 Reactive Power	
27	L3 Reactive Power	
28	Total Reactive Power	
29	L1 Apparent Power	
30	L2 Apparent Power	
31	L3 Apparent Power	
32	Total Apparent Power	
33	Demand Current	Refer to Metering Demand Results Parameters
34	Demand Power	
35	Demand Reactive Power	
36	Demand Apparent Power	
37	Projected Demand I	
38	Projected Demand W	
39	Projected Demand VAR	
40	Projected Demand VA	
41	L1 True Power Factor	Refer to Metering Power Factor Results Parameters
42	L2 True Power Factor	
43	L3 True Power Factor	
44	Three-phase True PF	
45	L1 Displacement Power Factor	
46	L2 Displacement Power Factor	
47	L3 Displacement Power Factor	
48	Three-phase Displacement PF	Refer to Metering Power Factor Results Parameters
49	L1 Distortion Power Factor	
50	L2 Distortion Power Factor	
51	L3 Distortion Power Factor	
52	Three-phase Distortion PF	

Min/Max Log Parameter List

Param No.	Parameter Name	Comment
53	V1 % IEEE THD	Refer to Harmonic Results: THD, Crest Factor, and More Parameters
54	I1 % IEEE THD	
55	V2 % IEEE THD	
56	I2 % IEEE THD	
57	V3 % IEEE THD	
58	I3 % IEEE THD	
59	I4 % IEEE THD	
60	V1 % IEC thd (DIN)	
61	I1 % IEC thd (DIN)	
62	V2 % IEC thd (DIN)	
63	I2 % IEC thd (DIN)	
64	V3 % IEC thd (DIN)	
65	I3 % IEC thd (DIN)	
66	I4 % IEC thd (DIN)	
67	V1 Crest Factor	
68	I1 Crest Factor	
69	V2 Crest Factor	
70	I2 Crest Factor	
71	V3 Crest Factor	
72	I3 Crest Factor	
73	I4 Crest Factor	

Min/Max Log Results Parameters

CSP File No.	F27
Remote I/O BT	28
CIP Assy. Inst.	31
No. of Elements	11
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	All

Min/Max Log Results

Element No.	Modbus Address	Element Name	Range	Comment
0	30801-02	Parameter # being returned	1...73	Refer to Reading Data from the Trend Log on page 152
1	30803-04	MIN value for parameter	-999.9x10 ²¹ ...999.9x10 ²¹	
2	30805-06	MAX value for parameter	-999.9x10 ²¹ ...999.9x10 ²¹	
3	30807-08	MIN timestamp; year month/day hour/minute sec/hsec	1998...2097	
4	30809-10		0101...1231	
5	30811-12		0000...2359	
6	30813-14		0000...5999	
7	30815-16	MAX timestamp; year month/day hour/minute sec/hsec	1998...2097	
8	30817-18		0101...1231	
9	30819-20		0000...2359	
10	30821-22		0000...5999	

Event Log Configuration/Read-back Record Select Parameters

CSP File No.	N28
Remote I/O BT	9
CIP Assy. Inst.	32 (Write), 33 (Read)
No. of Elements	6
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All
Applies to:	Event Log Results Parameters on page 229

Event Log Configuration/Read-back Record Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	41001	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1
1	41002	DeviceNet unique write identifier	-32,768...32,767	0	Refer to DeviceNet Unique Write Identifier on page 103
2	41003	Read-back mode	0...6	2	Refer to Configuring the Event Log by Using Communication on page 146
3	41004	Enable/disable logging status input changes	0...1	0	
4	41005	# events in the event log	1...50 (M4,M5) 1...100 (M6, M8)	-	
5	41006	Enable/disable logging of time/date set	0...1	1	

Event Log Results Parameters

CSP File No.	N29
Remote I/O BT	21
CIP Assy. Inst.	34
No. of Elements	14, 17, or 18 (see table)
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	See table

Event Log Results

Element No.	Modbus Address	M4 M5	M 6	M 8	Element Name	Range	Comment
0	30901	•	•	•	Reserved	0	Returns 0
1	30902	•	•	•	Internal identifier	0 ...32768	Refer to Reading Data from the Event Log by Using Communication on page 147
2	30903	•	•	•	Timestamp of event; Year Month/day Hour/minute Second/hsec	1998...2097	Refer to Expressing Data in Data Tables on page 82
3	30904	•	•	•		0101...1231	
4	30905	•	•	•		0000...2359	
5	30906	•	•	•		0000...5999	
6	30907	•	•	•	Event type	0...19	Refer to List of Event Types Parameters
7	30908	•	•	•	Event code	-	Refer to Reading Data from the Event Log by Using Communication on page 147
8	30909	•	•	•	Setpoint type	0...52	
9	30910	•	•	•	Setpoint evaluation condition	0...5	
10	30911	•	•	•	Setpoint level integer exponent	0...9999	
11	30912	•	•	•		-21...21	
12	30913	•	•	•	Setpoint action/release delay	0...3600 (M4, M5) 0...30,000 (M6, M8)	
13	30914	•	•	•	Setpoint action	0...32 (M4, M5) 0...43 (M6, M8)	
14	30915		•	•	Sustain limit timer integer exponent	0...9999	
15	30916		•	•		-4...21	
16	30917		•	•	Capture identifier	0...999	
17	30918			•	Reserved	0	Returns 0

Status Error Codes

Bits	Hex	Description
bit 0	0001h	Master module code flash status
bit 1	0002h	Master module data flash status
bit 2	0004h	Master module RAM Status
bit 3	0008h	Reserved for factory use
bit 4	0010h	Master module NVRAM status
bit 5	0020h	Master module data acquisition status
bit 6	0040h	Master module real time clock status
bit 7	0080h	Reserved for factory use
bit 8	0100h	Reserved for factory use
bit 9	0200h	Display module status
bit 10	0400h	Master module watchdog timer status
bit 11	0800h	Master module optional communication status
bit 12...15	1000h...8000h	Reserved for factory use

List of Event Types Parameters

Applies to	Event Log Results Parameters on page 229
PM3000 Type	See table

List of Event Types

Event Code.	M4 M5	M 6	M 8	Event Type	Event Command Code	Comment
0	•	•	•	No event	0	The log starts with no events recorded
1	•	•	•	Setpoint triggered	Setpoint Number	A setpoint activated
2	•	•	•	Setpoint released		A previously active setpoint released
3	•	•	•	Relay force energized	Relay Number	1 = Form C relay, 2 = KYZ
4	•	•	•	Relay force de-energized		
5	•	•	•	Relay force released		
6	•	•	•	Status input set	Status Input Number	
7	•	•	•	Status input cleared		
8	•	•	•	kWh counter set or cleared	1	Records command action
8	•	•	•	kVARh counter set or cleared	2	
8	•	•	•	kVAh counter set or cleared	3	
8	•	•	•	Ah counter set or cleared	4	
8	•	•	•	All energy counters cleared	5	
8	•	•	•	Trend log cleared	6	
8	•	•	•	Min/max log cleared	7	
8	•	•	•	Factory defaults restored	8	
8	•	•	•	Status input #1 counter cleared	9	
8	•	•	•	Status input #2 counter cleared	10	
8	•	•	•	Reserved	11	
8	•	•	•	Single setpoint timer cleared	12	
8	•	•	•	All setpoint timers cleared	13	
9	•	•	•	Power-up	0	Control power was applied
10	•	•	•	Power-down	0	Control power was lost or internal reset occurred
11	•	•	•	Selftest failure	Status Error Code	Refer to Status Error Codes (bitfield)
12	•	•	•	Date/time set	0	The date and/or time was set or altered
13	•	•	•	Change of non-setpoint config data	0	
14	•	•	•	Change of setpoint config data	0	
15	•	•	•	NVRAM Clr	0	NVRAM has been cleared due to an extended loss of control power or internal error
16			•	Transient detected		

List of Event Types

Event Code.	M4 M5	M 6	M 8	Event Type	Event Command Code	Comment
17			•	Reserved		Reserved
18	•	•	•	External Demand Sync Timeout		The demand delay expired before the next expected external demand sync
19	•	•	•	Comm Card Reset		An unexpected comm card condition has been detected and the master module has reset the comm card in an attempt to resume normal operation

User-configured Table Setup Parameters

CSP File No.	N30
Remote I/O BT	35
CIP Assy. Inst.	35 (Write), 36 (Read)
No. of Elements	26
User Configurable	No
Data Type	Integer
Data Access	Read /Write
PM3000 Type	All
Applies to	User-configured Table Results Parameters on page 235

User-configured Table Setup

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	41101	Password	0...9999	0	Required for configuration, returns -1
1	41102	DF1 or Ethernet (CSP) File No.	31	31	Refer to User-configured Data Table on page 121
		RIO BT No.	62	62	
		DeviceNet, EtherNet/IP, or ControlNet Ass'y Inst.	1, 37	37	
		Modbus	1000	31	
2	41103	DeviceNet, EtherNet/IP, or ControlNet instance 1 data type	0...1	0	
3	41104	Selection for parameter #1	0...301	71 (L1-L2 V)	
4	41105	Selection for parameter #2		72 (L2-L3 V)	
5	41106	Selection for parameter #3		73 (L3-L1 V)	
6	41107	Selection for parameter #4		63 (I1)	
7	41108	Selection for parameter #5		64 (I2)	
8	41109	Selection for parameter #6		65 (I3)	
9	41110	Selection for parameter #7		90 (W)	
10	41111	Selection for parameter #8		98 (VA)	
11	41112	Selection for parameter #9		94 (VAR)	
12	41113	Selection for parameter #10		111 (PF)	
13	41114	Selection for parameter #11		100 (Dmd W)	
14	41115	Selection for parameter #12		122 (kWh)	
15	41116	Selection for parameter #13		130 (Status)	
16	41117	Selection for parameter #14		14 (Year)	

User-configured Table Setup

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
17	41118	Selection for parameter #15	0...301	21 (Mo/Dy)	Parameters 15...23 not supported by the DeviceNet network
18	41119	Selection for parameter #16		22 (Hr/min)	
19	41120	Selection for parameter #17		23 (Sec/hsc)	
20	41121	Selection for parameter #18		0	
21	41122	Selection for parameter #19			
22	41123	Selection for parameter #20			
23	41124	Selection for parameter #21			
24	41125	Selection for parameter #22			
25	41126	Selection for parameter #23			

User-configured Table Results Parameters

CSP File No.	F31
Remote I/O BT	62
CIP Assy. Inst.	37
No. of Elements	14 (DeviceNet network) or 23 (All other communication options)
User Configurable	Yes
Data Type	Floating Point
Data Access	Read only
PM3000 Type	All

User-configured Table Results

Element No.	Modbus Address	Element Name	Range	Comment
0	31001-02	User selected parameter #1	-	Parameters previously setup during a write to the User-configured Table Setup Parameters table
1	31003-04	User selected parameter #2	-	
2	31005-06	User selected parameter #3	-	
3	31007-08	User selected parameter #4	-	
4	31009-10	User selected parameter #5	-	
5	31011-12	User selected parameter #6	-	
6	31013-14	User selected parameter #7	-	
7	31015-16	User selected parameter #8	-	
8	31017-18	User selected parameter #9	-	
9	31019-20	User selected parameter #10	-	
10	31021-22	User selected parameter #11	-	
11	31023-24	User selected parameter #12	-	
12	31025-26	User selected parameter #13	-	
13	31027-28	User selected parameter #14	-	
14	31029-30	User selected parameter #15	-	The DeviceNet network supports a maximum of 14 user-configured parameters
15	31031-32	User selected parameter #16	-	
16	31033-34	User selected parameter #17	-	
17	31035-36	User selected parameter #18	-	
18	31037-38	User selected parameter #19	-	
19	31039-40	User selected parameter #20	-	
20	31041-42	User selected parameter #21	-	
21	31043-44	User selected parameter #22	-	
22	31045-46	User selected parameter #23	-	

Write Error Status Parameters

CSP File No.	N32
Remote I/O BT	4
CIP Assy. Inst.	38
No. of Elements	2
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	All

Write Error Status

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	31101	File, instance or BT number		- -	Identifies data table written to last, value depends on comms type. For Modbus, starting address of table written to last.
1	31102	Offending Element			-1 = Last write was successful 0...26 = first unacceptable element of unsuccessful write For Remote I/O Only: 0 = Last write was successful 1...27 = First unacceptable word of unsuccessful write For Modbus Only: -1 = Last write was successful 40,001...42,001 - first unacceptable address of unsuccessful write.

Harmonic Analysis Configuration/Read-back Select Parameters

CSP File No.	N33
Remote I/O BT	14
CIP Assy. Inst.	39 (Write), 40 (Read)
No. of Elements	9
User Configurable	No
Data Type	Integer
Data Access	Read /Write
PM3000 Type	See table
Applies to:	Harmonic Results; THD, Crest Factor, and More Parameters on page 238 (All models) Harmonic Results; Odd Harmonics 1...21 Parameters on page 239 , Harmonic Results; Odd Harmonics 23...41 Parameters on page 240 , Harmonic Results; Even Harmonics 2...20 Parameters on page 241 , Harmonic Results; Even Harmonics 22...40 Parameters on page 242 (M6 & M8) Harmonic Results; Odd Harmonics 43...63 Parameters on page 256 , Harmonic Results; Even Harmonics 42...62 Parameters on page 257 (M8 only)

Harmonic Analysis Configuration/Read-back Select

Element No.	Modbus Address	M4 M5	M 6	M 8	Element Name	Range	Default Value	Comment
0	41201	•	•	•	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1.
1	41202	•	•	•	Channel	1...9	1	Refer to Configuring Harmonic Analysis on page 171.
2	41203	•	•	•	Read-back mode	0...1	0	
3	41204	•			Reserved	0	0	
			•	•	Individual harmonic data type	0...1	0	
4	41205	•			Reserved	0	0	
			•	•	Enable/disable Harmonics	0...1	1	
5	41206	•			Reserved	0	0	
			•	•	IEEE-519 Max I_{sc} Integer	0...9999	0	
6	41207	•			Reserved	0	0	
			•	•	IEEE-519 Max I_{sc} Exponent	-4...21	0	
7	41208	•			Reserved	0	0	
			•	•	IEEE 519 Max I_{dmnd} Integer	0...9999	0	
8	41209	•			Reserved	0	0	
			•	•	IEEE 519 Max I_{dmnd} Exponent	-4...21	0	

Harmonic Results; THD, Crest Factor, and More Parameters

CSP File No.	F34
Remote I/O BT	23
CIP Assy. Inst.	41
No. of Elements	9 (M4, M5); 10 (M6, M8)
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	See table

Harmonic Results; THD, Crest Factor, and More

Element No.	Modbus Address	M4 M5	M 6	M 8	Element Name	Range	Comment
0	31201-02	•	•	•	Channel number	1...9	Refer to Reading Harmonic Analysis Data on page 172
1	31203-04	•	•	•	% IEEE THD	0.0...1000.0	
2	31205-06	•	•	•	% IEC thd (DIN)	0.0...1000.0	
3	31207-08	•	•	•	Crest Factor	0.0...10.0	
4	31209-10	•	•	•	THD & Crest iteration	0...32,767	
5	31211-12	•			Reserved	0	
			•	•	TIF	0.0...999.9x10 ²²	
6	31213-14	•			Reserved	0	
			•	•	K-Factor	0.0...999.9x10 ²²	
7	31215-16	•			Reserved	0	
			•	•	IEEE-519 TDD	0.0...999.9x10 ²²	
8	31217-18	•			Reserved	0	
			•	•	IEEE-519 Pass/Fail	-1...1	
9	31219-20	•			Reserved	0	
			•	•	FFT iteration	0...32,767	

Harmonic Results; Odd Harmonics 1...21 Parameters

CSP File No.	F35
Remote I/O BT	39
CIP Assy. Inst.	42
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M6, M8 only

Harmonic Results; Odd Harmonics 1...21

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Harmonic Analysis Data on page 172
1	-	Type of harmonic data returned	0...1	
2	-	1 st Harmonic (Fundamental)	0.0	
3	-	3 rd Harmonic	0.0...999.9x10 ²²	
4	-	5 th Harmonic	0.0...999.9x10 ²²	
5	-	7 th Harmonic	0.0...999.9x10 ²²	
6	-	9 th Harmonic	0.0...999.9x10 ²²	
7	-	11 th Harmonic	0.0...999.9x10 ²²	
8	-	13 th Harmonic	0.0...999.9x10 ²²	
9	-	15 th Harmonic	0.0...999.9x10 ²²	
10	-	17 th Harmonic	0.0...999.9x10 ²²	
11	-	19 th Harmonic	0.0...999.9x10 ²²	
12	-	21 st Harmonic	0.0...999.9x10 ²²	
13	-	FFT iteration	0...32,767	

Harmonic Results; Odd Harmonics 23...41 Parameters

CSP File No.	F36
Remote I/O BT	40
CIP Assy. Inst.	43
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M6, M8 only

Harmonic Results; Odd Harmonics 23...41

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Harmonic Analysis Data on page 172
1	-	Type of harmonic data returned	0...1	
2	-	Reserved	0	
3	-	23 rd Harmonic	0.0...999.9x10 ²²	
4	-	25 th Harmonic	0.0...999.9x10 ²²	
5	-	27 th Harmonic	0.0...999.9x10 ²²	
6	-	29 th Harmonic	0.0...999.9x10 ²²	
7	-	31 st Harmonic	0.0...999.9x10 ²²	
8	-	33 rd Harmonic	0.0...999.9x10 ²²	
9	-	35 th Harmonic	0.0...999.9x10 ²²	
10	-	37 th Harmonic	0.0...999.9x10 ²²	
11	-	39 th Harmonic	0.0...999.9x10 ²²	
12	-	41 st Harmonic	0.0...999.9x10 ²²	
13	-	FFT iteration	0...32,767	

Harmonic Results; Even Harmonics 2...20 Parameters

CSP File No.	F37
Remote I/O BT	41
CIP Assy. Inst.	44
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M6, M8 only

Harmonic Results; Even Harmonics 2...20

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Harmonic Analysis Data on page 172
1	-	Type of harmonic data returned	0...1	
2	-	Reserved	0	
3	-	2 nd Harmonic	0.0...999.9x10 ²²	
4	-	4 th Harmonic	0.0...999.9x10 ²²	
5	-	6 th Harmonic	0.0 ...999.9x10 ²²	
6	-	8 th Harmonic	0.0...999.9x10 ²²	
7	-	10 th Harmonic	0.0...999.9x10 ²²	
8	-	12 th Harmonic	0.0 ...999.9x10 ²²	
9	-	14 th Harmonic	0.0...999.9x10 ²²	
10	-	16 th Harmonic	0.0...999.9x10 ²²	
11	-	18 th Harmonic	0.0...999.9x10 ²²	
12	-	20 th Harmonic	0.0...999.9x10 ²²	
13	-	FFT iteration	0...32,767	

Harmonic Results; Even Harmonics 22...40 Parameters

CSP File No.	F38
Remote I/O BT	42
CIP Assy. Inst.	45
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M6, M8 only

Harmonic Results; Even Harmonics 22...40

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Harmonic Analysis Data on page 172
1	-	Type of harmonic data returned	0...1	
2	-	Reserved	0	
3	-	22 nd Harmonic	0.0...999.9x10 ²²	
4	-	24 th Harmonic	0.0...999.9x10 ²²	
5	-	26 th Harmonic	0.0...999.9x10 ²²	
6	-	28 th Harmonic	0.0...999.9x10 ²²	
7	-	30 th Harmonic	0.0...999.9x10 ²²	
8	-	32 nd Harmonic	0.0...999.9x10 ²²	
9	-	34 th Harmonic	0.0...999.9x10 ²²	
10	-	36 th Harmonic	0.0...999.9x10 ²²	
11	-	38 th Harmonic	0.0...999.9x10 ²²	
12	-	40 th Harmonic	0.0...999.9x10 ²²	
13	-	FFT iteration	0...32,767	

Oscilloscope Configuration/Read-back Data Select Parameters

CSP File No.	N39
Remote I/O BT	15
CIP Assy. Inst.	46 (Write), 47 (Read)
No. of Elements	11
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	M6, M8 only
Applies to:	Oscilloscope Results Parameters

Oscilloscope Configuration/Read-back Data Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	-	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1
1	-	Capture No.	0...8 (M6) 0...2 (M8)	1	Refer to Configuring Oscilloscope on page 160
2	-	Channel No.	1...7	1	
3	-	Block No.	See page 161	1	
4	-	Read-back mode	0...2	0	
5	-	Clear/trigger command	0...10	0	
6	-	Capture type	-1...5	0	
7	-	% Pre-trigger	0...100	90	
8	-	Reserved	0	0	
9	-	Capture clear status	0...255	-	
10	-	Capture ready status	0...255	-	

Oscillograph Results Parameters

CSP File No.	N40
Remote I/O BT	61
CIP Assy. Inst.	48
No. of Elements	29 (DeviceNet network only) 59 (all other communication types)
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	M6, M8 only

Oscillograph Results

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Timestamp; Month/day Hour/minute Second/hsec	0000...1231	Trigger timestamp, see page 82 .
1	-		0000...2359	
2	-		0000...5999	

Oscilloscope Results

Element No.	Modbus Address	Element Name	Range	Comment
3	-	Capture #	1...8 (M6) 1...2 (M8)	Refer to Reading Oscilloscope Data on page 162
4	-	Channel number	1...7	
5	-	Block number	See page 80	
6	-	Capture type	0...5	
7	-	Trigger source and capture identifier	0...22999	
8	-	Trigger position	1...4600 1...9200	
9	-	Oscilloscope Data Point 1	-8192...8191	
10	-	Oscilloscope Data Point 2		
11	-	Oscilloscope Data Point 3		
12	-	Oscilloscope Data Point 4		
13	-	Oscilloscope Data Point 5		
14	-	Oscilloscope Data Point 6		
15	-	Oscilloscope Data Point 7		
16	-	Oscilloscope Data Point 8		
17	-	Oscilloscope Data Point 9		
18	-	Oscilloscope Data Point 10		
19	-	Oscilloscope Data Point 11		
20	-	Oscilloscope Data Point 12		
21	-	Oscilloscope Data Point 13		
22	-	Oscilloscope Data Point 14		
23	-	Oscilloscope Data Point 15		
24	-	Oscilloscope Data Point 16		
25	-	Oscilloscope Data Point 17		
26	-	Oscilloscope Data Point 18		
27	-	Oscilloscope Data Point 19		
28	-	Oscilloscope Data Point 20		

Oscillograph Results

Element No.	Modbus Address	Element Name	Range	Comment
29	-	Oscillograph Data Point 21		DeviceNet supports only 20 data points per read.
30	-	Oscillograph Data Point 22		
31	-	Oscillograph Data Point 23		
32	-	Oscillograph Data Point 24		
33	-	Oscillograph Data Point 25		
34	-	Oscillograph Data Point 26		
35	-	Oscillograph Data Point 27		
36	-	Oscillograph Data Point 28		
37	-	Oscillograph Data Point 29		
38	-	Oscillograph Data Point 30		
39	-	Oscillograph Data Point 31		
40	-	Oscillograph Data Point 32		
41	-	Oscillograph Data Point 33		
42	-	Oscillograph Data Point 34		
43	-	Oscillograph Data Point 35		
44	-	Oscillograph Data Point 36		
45	-	Oscillograph Data Point 37		
46	-	Oscillograph Data Point 38		
47	-	Oscillograph Data Point 39		
48	-	Oscillograph Data Point 40		
49	-	Oscillograph Data Point 41		
50	-	Oscillograph Data Point 42		
51	-	Oscillograph Data Point 43		
52	-	Oscillograph Data Point 44		
53	-	Oscillograph Data Point 45		
54	-	Oscillograph Data Point 46		
55	-	Oscillograph Data Point 47		
56	-	Oscillograph Data Point 48		
57	-	Oscillograph Data Point 49		
58	-	Oscillograph Data Point 50		

Load Factor Log Configuration/Read-back Select Parameters

CSP File No.	N41
Remote I/O BT	16
CIP Assy. Inst.	49 (Write), 50 (Read)
No. of Elements	6
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	M6, M8 only
Applies to:	Load Factor Log Results Parameters on page 248

Load Factor Log Configuration/Read-back Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	-	Password	0...9999	0	Required for configuration or command, -1 for readback select, returns -1 Refer to Reading the Load Factor Log on page 178
1	-	Record to read-back	0...12	0	
2	-	Read-back mode	0...1	1	
3	-	Clear peak / reset average command	0...1	0	
4	-	Auto clear/reset day	0...31	31	
5	-	Reserved	0	0	

Load Factor Log Results Parameters

CSP File No.	F42
Remote I/O BT	43
CIP Assy. Inst.	51
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M6, M8 only

Load Factor Log Results

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Peak Demand W	0.0...999.9x10 ²¹	Refer to Reading the Load Factor Log on page 178
1	-	Average Demand W	0.0...999.9x10 ²¹	
2	-	Load Factor W	0...100.0	
3	-	Peak Demand VAR	0.0...999.9x10 ²¹	
4	-	Average Demand VAR	0.0...999.9x10 ²¹	
5	-	Load Factor VAR	0...100.0	
6	-	Peak Demand VA	0.0...999.9x10 ²¹	
7	-	Average Demand VA	0.0...999.9x10 ²¹	
8	-	Load Factor VA	0...100.0	
9	-	Peak Demand I	0.0...999.9x10 ²¹	
10	-	Average Demand I	0.0...999.9x10 ²¹	
11	-	Load Factor I	0...100.0	
12	-	Elapsed time	0.0...999.9x10 ²¹	
13	-	Ending month/day/year	0...123199	

Transient Analysis Configuration/Read-back Select Parameters

CSP File No.	F43
Remote I/O BT	44
CIP Assy. Inst.	52 (Write), 53 (Read)
No. of Elements	10
User Configurable	No
Data Type	Floating Point
Data Access	Read / Write
PM3000 Type	M8 only
Applies to	Transient analysis metering results

Transient Analysis Configuration/Read-back Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	-	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1.
1	-	DeviceNet unique write identifier	-32,768...32,767	0	Refer to DeviceNet Unique Write Identifier on page 103.
2	-	Capture #	0...6	1	Refer to Transient Analysis Configuration on page 180.
3	-	Cycle #	1...12	1	
4	-	Read-back mode	0...1	0	
5	-	Detection mode	0...3	1	
6	-	Reserved	0	0	
7	-	Auto-threshold set command	0...1	0	
8	-	Auto-threshold set duration	1...3600	10	
9	-	Auto-threshold set margin	1.0...100.0	20.0	
10	-	Voltage trigger threshold	0.1...100.0	10.0	
11	-	Current trigger threshold	0.1...100.0	10.0	
12	-	Auto-threshold duration time left	0	0	

Transient Analysis Metering Results Parameters

CSP File No.	F44
Remote I/O BT	32
CIP Assy. Inst.	54
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read only
PM3000 Type	M8 only

Transient Analysis Metering Results

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Capture number	1...6	Refer to Reading Transient Analysis Metering Data on page 181.
1	-	Cycle number	1...12	
2	-	L1-L2 or L1-N Voltage	0.0...999.9x10 ²¹	
3	-	L2-L3 or L2-N Voltage	0.0...999.9x10 ²¹	
4	-	L3-L1 or L3-N Voltage	0.0...999.9x10 ²¹	
5	-	L1 Current	0.0...999.9x10 ²¹	
6	-	L2 Current	0.0...999.9x10 ²¹	
7	-	L3 Current	0.0...999.9x10 ²¹	
8	-	L4 Current	0.0...999.9x10 ²¹	
9	-	Voltage Index at trigger	-999.0x10 ³ ...999.0x10 ³	
10	-	Current Index at trigger	-999.0x10 ³ ...999.0x10 ³	
11	-	Voltage Trigger Threshold	0.0...999.0x10 ³	
12	-	Current Trigger Threshold	0.0...999.0x10 ³	
13	-	Unique Transient Capture ID	0...30,000	

Transient Capture Clear/Read-back Data Select Parameters

CSP File No.	N45
Remote I/O BT	17
CIP Assy. Inst.	55 (Write), 56 (Read)
No. of Elements	13
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	M8 only
Applies to	Transient Capture Results Parameters on page 252

Transient Capture Clear/Read-back Data Select

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	-	Password	0...9999	0	Required for configuration, -1 for readback select, returns -1.
1	-	Dnet unique write identifier	-32,768...32,767	0	Refer to DeviceNet Unique Write Identifier on page 103.
2	-	Capture number	0...6	1	Refer to Reading Transient Capture Data on page 182.
3	-	Channel number	1...7	1	
4	-	Block number	See page 90	1	
5	-	Read-back mode	0...2	0	
6	-	Clear command	0...3	0	
7	-	Reserved	0	0	
8	-	Reserved	0	0	
9	-	Reserved	0	0	
10	-	Capture clear status	0...63	-	
11	-	Capture ready status	0...63	-	
12	-	Reserved	0	0	

Transient Capture Results Parameters

CSP File No.	N46
Remote I/O BT	60
CIP Assy. Inst.	57
No. of Elements	29 (DeviceNet network only); 59 (All other communication types)
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	M8 only

Transient Capture Results

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Timestamp; Month/day Hour/minute Second/hsec	0000...1231	Capture trigger timestamp, see page 82 .
1	-		0000...2359	
2	-		0000...5999	

Transient Capture Results

Element No.	Modbus Address	Element Name	Range	Comment
3	-	Capture #	1...6	Refer to Reading Transient Capture Data on page 182.
4	-	Channel number	1...7	
5	-	Block number	1...70 for DeviceNet 1...28 for all other comms options	
6	-	Reserved	0	
7	-	Unique Transient Capture ID	0...30,000	
8	-	Reserved	0	
9	-	Data Point 1	-8192...8191	
10	-	Data Point 2		
11	-	Data Point 3		
12	-	Data Point 4		
13	-	Data Point 5		
14	-	Data Point 6		
15	-	Data Point 7		
16	-	Data Point 8		
17	-	Data Point 9		
18	-	Data Point 10		
19	-	Data Point 11		
20	-	Data Point 12		
21	-	Data Point 13		
22	-	Data Point 14		
23	-	Data Point 15		
24	-	Data Point 16		
25	-	Data Point 17		
26	-	Data Point 18		
27	-	Data Point 19		
28	-	Data Point 20		

Transient Capture Results

Element No.	Modbus Address	Element Name	Range	Comment
29	-	Data Point 21	-8192...8191	The DeviceNet network returns only 20 data points per read.
30	-	Data Point 22		
31	-	Data Point 23		
32	-	Data Point 24		
33	-	Data Point 25		
34	-	Data Point 26		
35	-	Data Point 27		
36	-	Data Point 28		
37	-	Data Point 29		
38	-	Data Point 30		
39	-	Data Point 31		
40	-	Data Point 32		
41	-	Data Point 33		
42	-	Data Point 34		
43	-	Data Point 35		
44	-	Data Point 36		
45	-	Data Point 37		
46	-	Data Point 38		
47	-	Data Point 39		
48	-	Data Point 40		
49	-	Data Point 41		
50	-	Data Point 42		
51	-	Data Point 43		
52	-	Data Point 44		
53	-	Data Point 45		
54	-	Data Point 46		
55	-	Data Point 47		
56	-	Data Point 48		
57	-	Data Point 49		
58	-	Data Point 50		

Advanced Metering Configuration Parameters

CSP File No.	N47
Remote I/O BT	19
CIP Assy. Inst.	58 (Write), 59 (Read)
No. of Elements	10
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	M8 only

Advanced Metering Configuration

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	-	Password	0...9999	0	Required for configuration, returns -1.
1	-	Meter result set	0...2	0	Refer to Advanced Metering Options on page 54.
2	-	Reserved	0	0	Must be 0 on a write, returns 0.
3	-				
4	-				
5	-				
6	-				
7	-				
8	-				
9	-				

Harmonic Results; Odd Harmonics 43...63 Parameters

CSP File No.	F48
Remote I/O BT	45
CIP Assy. Inst.	60
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read Only
PM3000 Type	M8 only

Harmonic Results; Odd Harmonics 43...63

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Individual Harmonic Values on page 173.
1	-	Type of harmonic data returned	0...1	
2	-	43 rd Harmonic	0.0...999.9x10 ²²	
3	-	45 th Harmonic		
4	-	47 th Harmonic		
5	-	49 th Harmonic		
6	-	51 st Harmonic		
7	-	53 rd Harmonic		
8	-	55 th Harmonic		
9	-	57 th Harmonic		
10	-	59 th Harmonic		
11	-	61 st Harmonic		
12	-	63 rd Harmonic		
13	-	FFT iteration	0...32,767	

Harmonic Results; Even Harmonics 42...62 Parameters

CSP File No.	F49
Remote I/O BT	46
CIP Assy. Inst.	61
No. of Elements	14
User Configurable	No
Data Type	Floating Point
Data Access	Read Only
PM3000 Type	M8 only

Harmonic Results; Even Harmonics 42...62

Element No.	Modbus Address	Element Name	Range	Comment
0	-	Channel # returned	1...7	Refer to Reading Individual Harmonic Values on page 173.
1	-	Type of harmonic data returned	0...1	
2	-	42 nd Harmonic	0.0...999.9x10 ²²	
3	-	44 th Harmonic		
4	-	46 th Harmonic		
5	-	48 th Harmonic		
6	-	50 th Harmonic		
7	-	52 nd Harmonic		
8	-	54 th Harmonic		
9	-	56 th Harmonic		
10	-	58 th Harmonic		
11	-	60 th Harmonic		
12	-	62 nd Harmonic		
13	-	FFT iteration	0...32,767	

Catalog Number and WIN Parameters

CSP File No.	N51
Remote I/O BT	50
CIP Assy. Inst.	64
No. of Elements	29
User Configurable	No
Data Type	Integer
Data Access	Read only
PM3000 Type	All

Catalog Number and WIN

Element No.	Modbus Address	Element Name	Range	Comment
0	32301	Catalog # text char pair #1	-32,768 ...32,767	Catalog number without dashes. Each element contains a character pair For each character pair, character 1 = element / 256 and character 2 = remainder The 6th character of the catalog string reflects the Current model of the product
1	32302	Catalog # text char pair #2		
2	32303	Catalog # text char pair #3		
3	32304	Catalog # text char pair #4		
4	32305	Catalog # text char pair #5		
5	32306	Catalog # text char pair #6		
6	32307	Catalog # text char pair #7		
7	32308	Reserved	0	Returns 0
8	32309			
9	32310	Hardware series	0...25	Indicates the series of the product; 0 = A, 1 = B
10	32311	WIN text character pair #1	-32,768 ...32,767	WIN (warranty identification number). This is the same 10-character alpha-numeric string printed on the master module label. Each element contains a character pair
11	32312	WIN text character pair #2		
12	32313	WIN text character pair #3		
13	32314	WIN text character pair #4		
14	32315	WIN text character pair #5		
15	32316	Reserved	0	Returns 0
16	32317			
17	32318	Original model	0...9	The model as it was originally built. 4 = M4, 5 = M5
18	32319	Current model		Differs from Original model if field-upgraded

Catalog Number and WIN

Element No.	Modbus Address	Element Name	Range	Comment
19	32320	Reserved	0	Returns 0
20	32321			
21	32322			
22	32323			
23	32324			
24	32325			
25	32326			
26	32327			
27	32328			
28	32329			

Network Demand Sync and Time Configuration Parameters

CSP File No.	N52
Remote I/O BT	-
CIP Assy. Inst.	65, 66
No. of Elements	20
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	Ethernet

Network Demand Sync and Time Configuration

Element No.	Modbus Address	Parameter Name	Range	Default Value	Description
0	41901	Password	0...9999	0	On a write, the correct password is required to change configuration data. On a read, -1 is returned.
1	41902	Input mode	0...3	3	Refer to Network Demand / Time Configuration on page 55.
2	41903	Broadcast port number	300...400	300	
3	41904	SNTP IP address 1, octet 1	0...255	0	
4	41905	SNTP IP address 1, octet 2			
5	41906	SNTP IP address 1, octet 3			
6	41907	SNTP IP address 1, octet 4			
7	41908	Time zone	-12...12	0	
8	41909	Time set update interval	0...32,766	60 s	
9	41910	SNTP IP address 2, octet 1	0...255	0	SNTP IP address 2 is a back-up server address when the first address fails.
10	41911	SNTP IP address 2, octet 2		0	
11	41912	SNTP IP address 2, octet 3		0	
12	41913	SNTP IP address 2, octet 4		0	
13	41914	SNTP IP address 3, octet 1		0	SNTP IP address 3 is a back-up server address when the second address fails.
14	41915	SNTP IP address 3, octet 2		0	
15	41916	SNTP IP address 3, octet 3		0	
16	41917	SNTP IP address 3, octet 4		0	
17	41918	Reserved	0	0	Reserved for future use.
18	41919	Reserved	0	0	On a write, only a 0 is accepted. On a read, always returns 0.
19	41920	Reserved	0	0	

Controller Command Parameters

CSP File No.	N53
Remote I/O BT	-
CIP Assy. Inst.	67
No. of Elements	1
User Configurable	No
Data Type	Integer
Data Access	Write only
PM3000 Type	Ethernet

Controller Command

Element No.	Element Name	Range	Default Value	Comment
0	Controller Command Bits 0	0...32,767	0	Refer to Network Demand / Time Configuration on page 55

Daylight Saving Time Configuration Parameters

CSP File No.	N54
Remote I/O BT	47
CIP Assy. Inst.	68 (Write), 69 (Read)
No. of Elements	10
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Daylight Saving Time Configuration

Element No.	Modbus Address	Element name	Range	Default	Comment
0	42101	Password	-1...9999	0	Required for configuration. Returns -1
1	42102	DST Enable	0...1	0	0 = Disabled, 1 = Enabled
2	42103	DST Start Month	1...12	3	1 = January, 2 = February...
3	42104	DST Start Day	0...6	0	0 = Sunday, 1 = Monday...
4	42105	DST Start Day Instance	1...5	2	1 = 1st, 2 = 2nd, ... 5 = Last
5	42106	DST Start Hour	0...23	2	0 = 12:00 midnight, 1 = 1:00 AM...
6	42107	DST End Month	1...12	11	1 = January, 2 = February...
7	42108	DST End Day	0...6	0	0 = Sunday, 1 = Monday...
8	42109	DST End Day Instance	1...5	1	1 = 1st, 2 = 2nd, ... 5 = Last
9	43110	DST End Hour	0...23	2	0 = 12:00 midnight, 1 = 1:00 AM...

Time of Use Register Configuration Parameters

CSP File No.	N55
Remote I/O BT	49
CIP Assy. Inst.	70 (Write), 71 (Read)
No. of Elements	10
User Configurable	No
Data Type	Integer
Data Access	Read / Write
PM3000 Type	All

Time of Use Register Configuration

Element No.	Modbus Address	Element Name	Range	Default	Comment
0	42201	Password	-1...9999	0	Required for configuration, -1 for readback select, Returns -1 Refer to Configuring the Time-of-use Log on page 157
1	42202	Record to read back	0...12	0	
2	42203	Reserved	0	0	
3	42204	Write command	0...1	0	
4	42205	Log day	1...31	31	
5	42206	Off peak day	0...127	65	
6	42207	Mid peak a.m.	0...4095	1792	
7	42208	Mid peak p.m.		120	
8	42209	Peak a.m.		2048	
9	42210	Peak p.m.		7	

Time of Use Records – Real Energy and Demand Parameters

CSP File No.	F56
Remote I/O BT	51
CIP Assy. Inst.	72
No. of Elements	12
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Time of Use Records – Real Energy and Demand

Element No.	Modbus Address	Element Name	Range	Units	Comment
0	32401-02	Off-peak real energy	-999,999.0... 999,999.0	MWh	Refer to Reading Time-of-use Log Data on page 158
1	32403-04	Off-peak real energy	-999,999.999... 999,999.999	kWh	
2	32405-06	Off-peak demand	0.0...999.9 x 10 ²¹	Watts	
3	32407-08	Mid-peak real energy	-999,999.0... 999,999.0	MWh	
4	32409-10	Mid-peak real energy	-999,999.999... 999,999.999	kWh	
5	32411-12	Mid-peak demand	0.0...999.9 x 10 ²¹	Watts	
6	32413-14	Peak real energy	-999,999.0... 999,999.0	MWh	
7	32415-16	Peak real energy	-999,999.999... 999,999.999	kWh	
8	32417-18	Peak demand	0.0...999.9 x 10 ²¹	Watts	
9	33419-20	Record number	0...12		
10	32421-22	Start date	000101...991231	YYMMDD	Start month / day for data stored in this record, inclusive
11	32423-24	End date	000101...991231	YYMMDD	End month / day for data stored in this record, inclusive

Time of Use Records – Reactive Energy and Demand Parameters

CSP File No.	F57
Remote I/O BT	52
CIP Assy. Inst.	73
No. of Elements	12
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Time of Use Records – Reactive Energy and Demand

Element No.	Modbus Address	Element Name	Range	Units	Comment
0	32501-02	Off-peak reactive energy	-999,999.0... 999,999.0	MVARh	Refer to Reading Time-of-use Log Data on page 158
1	32503-04	Off-peak reactive energy	-999,999.999... 999,999.999	kVARh	
2	32505-06	Off-peak demand VARs	0.0...999.9 x 10 ²¹	VAR	
3	32507-08	Mid-peak reactive energy	-999,999.0... 999,999.0	MVARh	
4	32509-10	Mid-peak reactive energy	-999,999.999... 999,999.999	kVARh	
5	32511-12	Mid-peak demand VARs	0.0...999.9 x 10 ²¹	VAR	
6	32513-14	Peak reactive energy	-999,999.0... 999,999.0	MVARh	
7	32515-16	Peak reactive energy	-999,999.999... 999,999.999	kVARh	
8	32517-18	Peak demand VARs	0.0...999.9 x 10 ²¹	VAR	
9	32519-20	Record number	0...12		
10	32521-22	Start date	000101...991231	YYMMDD	Start month / day for data stored in this record, inclusive
11	33523-24	End date	000101...991231	YYMMDD	End month / day for data stored in this record, inclusive

Time of Use Records – Apparent Energy and Demand Parameters

CSP File No.	F58
Remote I/O BT	53
CIP Assy. Inst.	74
No. of Elements	12
User Configurable	No
Data Type	Floating point
Data Access	Read only
PM3000 Type	All

Time of Use Records – Apparent Energy and Demand

Element No.	Modbus Address	Element Name	Range	Units	Comment
0	32601-02	Off-peak apparent energy	-999,999.0... 999,999.0	MVAh	Refer to Reading Time-of-use Log Data on page 158
1	32603-04	Off-peak apparent energy	-999,999.999... 999,999.999	kVAh	
2	32605-06	Off-peak demand VA	0.0...999.9 x 10 ²¹	VA	
3	32607-08	Mid-peak apparent energy	-999,999.0... 999,999.0	MVAh	
4	32609-10	Mid-peak apparent energy	-999,999.999... 999,999.999	kVAh	
5	32611-12	Mid-peak demand VA	0.0...999.9 x 10 ²¹	VA	
6	32613-14	Peak apparent energy	-999,999.0... 999,999.0	MVAh	
7	32615-16	Peak apparent energy	-999,999.999... 999,999.999	kVAh	
8	32617-18	Peak demand VA	0.0...999.9 x 10 ²¹	VA	
9	32619-20	Record number	0...12		
10	32621-22	Start date	000101...991231	YYMMDD	Start month / day for data stored in this record, inclusive
11	33623-24	End date	000101...991231	YYMMDD	End month / day for data stored in this record, inclusive

Single Password Write Parameters

CSP File No.	N60
Remote I/O BT	-
CIP Assy. Inst.	75, 76
No. of Elements	1
User Configurable	No
Data Type	Integer
Data Access	Read/Write
PM3000 Type	All except Remote I/O units

Single Password Write

Element No.	Modbus Address	Element Name	Range	Default Value	Comment
0	42701	Password	-1...9999	0	On a write, the correct password is required to change configuration data. On a read, -1 is returned.

Single Parameter Read Parameters

CSP File No.	-
Remote I/O BT	-
CIP Assy. Inst.	80...102
No. of Elements	1 each
User Configurable	No
Data Type	Floating point, little-endian, fixed configuration, or integer (see listing)
Data Access	Read only
PM3000 Type	DeviceNet units only

Single Parameter Read

CIP Assy. Instance	Parameter Name	Data Type	Range	Comment
80	Ave L-L Volts	Float	0.0...999.9x10 ²¹	
81	L1-L2 Volts	Float	0.0...999.9x10 ²¹	
82	L2-L3 Volts	Float	0.0...999.9x10 ²¹	
83	L3-L1 Volts	Float	0.0...999.9x10 ²¹	
84	L1 Amps	Float	0.0...999.9x10 ²¹	
85	L2 Amps	Float	0.0...999.9x10 ²¹	
86	L3 Amps	Float	0.0...999.9x10 ²¹	
87	L4 Amps	Float	0.0...999.9x10 ²¹	
88	Demand Power	Float	0.0...999.9x10 ²¹	
89	Demand VARs	Float	0.0...999.9x10 ²¹	
90	3 Ph PF	Float	0.0...999.9x10 ²¹	
91	Ave Amps	Float	0.0...999.9x10 ²¹	
92	Ave L-N Volts	Float	0.0...999.9x10 ²¹	
93	Frequency	Float	0, 40 ... 75, 999	
94	Total Watts	Float	0.0...999.9x10 ²¹	
95	Total VARs	Float	0.0...999.9x10 ²¹	
96	Total VA	Float	0.0...999.9x10 ²¹	
97	Energy kWh x 1	Integer	0...999	
98	Energy kWh x 1,000	Integer	0...999	
99	Energy kWh x 1,000,000	Integer	0...999	
100	Energy kVARh x 1	Integer	0...999	
101	Energy kVARh x 1,000	Integer	0...999	
102	Energy kVARh x 1,000,000	Integer	0...999	

Parameters for Trend Log and Configurable Table Parameters

Applies to	Trend Log Configuration/Read-back Record Select Parameters on page 220 Trend Log Results Parameters on page 221 User-configured Table Setup Parameters on page 233 User-configured Table Results Parameters on page 235
PM3000 Type	Ethernet

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
0	None	No parameter
1	Relay output status	Refer to Discrete Data Parameters
2	Solid-state KYZ output status	
3	Alarm output word	
4	Status inputs state	
5	Status input #1 counter	
6	Status input #2 counter	
7	Voltage Mode (Wiring Configuration)	Refer to Basic Device Configuration Parameters
8	PT Primary	
9	PT Secondary	
10	I1/I2/I3 CT Primary	
11	I1/I2/I3 CT Secondary	
12	I4 CT Primary	
13	I4 CT Secondary	
14	Date: Year	Refer to Date and Time Parameters
15	Date: Month	
16	Date: Day	
17	Time: Hour	
18	Time: Minute	
19	Time: Seconds	
20	Time: Hundredths of seconds	
21	Date: Month/day	Refer to Date and Time Parameters (compact to take less space)
22	Time: Hour/minute	
23	Time Second/hsec	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
24	Demand Period Length	Refer to Advanced Device Configuration Parameters
25	Number of Demand Periods	
26	Predicted Demand Type	
27	KYZ Pulse Output Parameter	
28	KYZ Pulse Output Scale	
29	KYZ Pulse Output Width	
30	Relay Pulse Output Parameter	
31	Relay Pulse Output Scale	
32	Relay Pulse Output Width	
33	RMS Resolution	
34	RMS result averaging	
35	Frequency averaging	
36	Default relay state in event of communication loss	
37	Default KYZ state in event of communication loss	
38	DM text scroll rate	
39	Protocol	Refer to Native Communication Configuration Parameters
40	Delay	
41	Baud rate	
42	Device address	
43	Data format	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
44	Comm parameter #1	Refer to Optional Communication Configuration Parameters
45	Comm parameter #2	
46	Comm parameter #3	
47	Comm parameter #4	
48	Comm parameter #5	
49	Comm parameter #6	
50	Comm parameter #7	
51	Comm parameter #8	
52	Comm parameter #9	
53	Comm parameter #10	
54	Comm parameter #11	
55	Comm parameter #12	
56	Comm parameter #13	
57	Comm parameter #14	
58	Comm parameter #15	
59	Comm parameter #16	
60	Comm parameter #17	
61	Comm parameter #18	
62	Comm parameter #19	
63	L1 Current	Refer to Metering Voltage, Current, and Frequency Result Parameters
64	L2 Current	
65	L3 Current	
66	Avg Current	
67	L1-N Voltage	
68	L2-N Voltage	
69	L3-N Voltage	
70	Avg L-N Voltage	
71	L1-L2 Voltage	
72	L2-L3 Voltage	
73	L3-L1 Voltage	
74	Avg L-L Voltage	
75	Frequency, last cycle	
76	Metering iteration	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
77	L4 Current	Refer to Metering Sequence Voltage, and Current Results Parameters
78	Positive Sequence Current	
79	Negative Sequence Current	
80	% Current unbalance	
81	Positive Sequence Voltage	
82	Negative Sequence Voltage	
83	% Voltage unbalance	
84	Phase rotation	
85	Average frequency	Refer to Metering Power Results Parameters
86	Frequency source	
87	L1 Real Power	
88	L2 Real Power	
89	L3 Real Power	
90	Total Real Power	
91	L1 Reactive Power	
92	L2 Reactive Power	
93	L3 Reactive Power	
94	Total Reactive Power	
95	L1 Apparent Power	Refer to Metering Demand Results Parameters
96	L2 Apparent Power	
97	L3 Apparent Power	
98	Total Apparent Power	
99	Demand Current	
100	Demand Power	
101	Demand Reactive Power	
102	Demand Apparent Power	
103	Projected Demand I	
104	Projected Demand W	
105	Projected Demand VAR	
106	Projected Demand VA	
107	Elapsed demand period time	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
108	L1 True Power Factor	Refer to Metering Power Factor Results Parameters
109	L2 True Power Factor	
110	L3 True Power Factor	
111	Three-phase True PF	
112	L1 Displacement Power Factor	
113	L2 Displacement Power Factor	
114	L3 Displacement Power Factor	
115	Three-phase Displacement PF	
116	L1 Distortion Power Factor	
117	L2 Distortion Power Factor	
118	L3 Distortion Power Factor	
119	Three-phase Distortion PF	
120	kWh forward	Refer to Metering Real and Apparent Energy Results Parameters
121	kWh reverse	
122	kWh net	
123	kVAh	
124	kVARh forward	Refer to Metering Reactive Energy and Amp-hour Results Parameters
125	kVARh reverse	
126	kVARh net	
127	kAh	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
128	Bulletin number	Refer to Selftest/Diagnostic Results Parameters
129	Series	
130	Overall status	
131	ASIC status	
132	Data FLASH status	
133	Real-time clock status	
134	RTC NVRAM status	
135	Option comm status	
136	Display module status	
137	Watchdog status	
138	VCO lock status	
139	Reserved	
140	Application FRN	
141	Boot code FRN	
142	ASIC 'FRN'	
143	Option comm FRN	
144	Display module FRN	
145	Reserved	
146	Digital board revision	
147	Analog board revision	
148	Option comm board revision	
149	Reserved	
150	MM Device ID	
151	MM RAM type	
152	Display module type	
153	Option comm type	
154	Reserved	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
155	Setpoint #1 type	Refer to Setpoint Setup/Read-back Select and Status Parameters
156	Setpoint #2 type	
157	Setpoint #3 type	
158	Setpoint #4 type	
159	Setpoint #5 type	
160	Setpoint #6 type	
161	Setpoint #7 type	
162	Setpoint #8 type	
163	Setpoint #9 type	
164	Setpoint #10 type	
165	Setpoint #1 evaluation condition	
166	Setpoint #2 evaluation condition	
167	Setpoint #3 evaluation condition	
168	Setpoint #4 evaluation condition	
169	Setpoint #5 evaluation condition	
170	Setpoint #6 evaluation condition	
171	Setpoint #7 evaluation condition	
172	Setpoint #8 evaluation condition	
173	Setpoint #9 evaluation condition	
174	Setpoint #10 evaluation condition	
175	Setpoint #1 high limit	
176	Setpoint #2 high limit	
177	Setpoint #3 high limit	
178	Setpoint #4 high limit	
179	Setpoint #5 high limit	
180	Setpoint #6 high limit	
181	Setpoint #7 high limit	
182	Setpoint #8 high limit	
183	Setpoint #9 high limit	
184	Setpoint #10 high limit	
185	Setpoint #1 low limit	
186	Setpoint #2 low limit	
187	Setpoint #3 low limit	
188	Setpoint #4 low limit	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
189	Setpoint #5 low limit	Refer to Setpoint Setup/Read-back Select and Status Parameters
190	Setpoint #6 low limit	
191	Setpoint #7 low limit	
192	Setpoint #8 low limit	
193	Setpoint #9 low limit	
194	Setpoint #10 low limit	
195	Setpoint #1 action delay	
196	Setpoint #2 action delay	
197	Setpoint #3 action delay	
198	Setpoint #4 action delay	
199	Setpoint #5 action delay	
200	Setpoint #6 action delay	
201	Setpoint #7 action delay	
202	Setpoint #8 action delay	
203	Setpoint #9 action delay	
204	Setpoint #10 action delay	
205	Setpoint #1 release delay	
206	Setpoint #2 release delay	
207	Setpoint #3 release delay	
208	Setpoint #4 release delay	
209	Setpoint #5 release delay	
210	Setpoint #6 release delay	
211	Setpoint #7 release delay	
212	Setpoint #8 release delay	
213	Setpoint #9 release delay	
214	Setpoint #10 release delay	
215	Setpoint #1 action type	
216	Setpoint #2 action type	
217	Setpoint #3 action type	
218	Setpoint #4 action type	
219	Setpoint #5 action type	
220	Setpoint #6 action type	
221	Setpoint #7 action type	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
222	Setpoint #8 action type	Refer to Setpoint Setup/Read-back Select and Status Parameters
223	Setpoint #9 action type	
224	Setpoint #10 action type	
225	Setpoint #1 status	
226	Setpoint #2 status	
227	Setpoint #3 status	
228	Setpoint #4 status	
229	Setpoint #5 status	
230	Setpoint #6 status	
231	Setpoint #7 status	
232	Setpoint #8 status	
233	Setpoint #9 status	
234	Setpoint #10 status	
235	Setpoint #1 accumulated active time	
236	Setpoint #2 accumulated active time	
237	Setpoint #3 accumulated active time	
238	Setpoint #4 accumulated active time	
239	Setpoint #5 accumulated active time	
240	Setpoint #6 accumulated active time	
241	Setpoint #7 accumulated active time	
242	Setpoint #8 accumulated active time	
243	Setpoint #9 accumulated active time	
244	Setpoint #10 accumulated active time	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
245	Logging interval	Refer to Trend Log Configuration/Read-back Record Select Parameters
246	Logging mode	
247	Total records logged	
248	Trend log param #1	
249	Trend log param #2	
250	Trend log param #3	
251	Trend log param #4	
252	Trend log param #5	
253	Trend log param #6	
254	Trend log param #7	
255	Trend log param #8	
256	Trend log param #9	
257	Trend log param #10	
258	Trend log param #11	
259	Trend log param #12	
260	Trend log param #13	
261	Trend log param #14	
262	Trend log param #15	
263	Trend log param #16	
264	Enable/disable Min/max log	Refer to Min/Max Log Configuration/Read-back Select Parameters
265	Timestamp of last min/max clear; year	
266	Timestamp of last min/max clear; Month/day	
267	Timestamp of last min/max clear; Hour/min	
268	Timestamp of last min/max clear; Second/hsec	
269	Enable/disable save status input changes to Event log	Refer to Event Log Configuration/Read-back Record Select Parameters
270	Number of events in the event log	
271	Write error status File/BT/Inst.No.	Refer to Write Error Status Parameters
272	Write error status Parameter number	

Parameters for Trend Log and Configurable Table

Param No.	Parameter Name	Comment
273	V1 % IEEE THD	Refer to Harmonic Results: THD, Crest Factor, and More Parameters
274	I1 % IEEE THD	
275	V2 % IEEE THD	
276	I2 % IEEE THD	
277	V3 % IEEE THD	
278	I3 % IEEE THD	
279	I4 % IEEE THD	
280	V1 % IEC THD (DIN)	
281	I1 % IEC THD (DIN)	
282	V2 % IEC THD (DIN)	
283	I2 % IEC THD (DIN)	
284	V3 % IEC THD (DIN)	
285	I3 % IEC THD (DIN)	
286	I4 % IEC THD (DIN)	
287	V1 Crest Factor	
288	I1 Crest Factor	
289	V2 Crest Factor	
290	I2 Crest Factor	
291	V3 Crest Factor	
292	I3 Crest Factor	
293	I4 Crest Factor	
294	THD & Crest iteration	
295	DeviceNet instance 1 data type	Refer to User-configured Table Setup Parameters
296	Avg IEEE THD V	Refer to Harmonic Results: THD, Crest Factor, and More Parameters
297	Avg IEEE THD I	
298	Avg IEC THD V	
299	Avg IEC THD I	
300	Avg Crest Factor V	
301	Avg Crest Factor I	